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ABSTRACT

This document presents basic conceptual components associated with the development and implementation of a college information system at Freed-Hardeman College. Section one presents the rationale for college information systems and establishes the need for improving information systems. The major characteristics essential to the design and implementation of a college information system are discussed in section two. In addition, a generalized network of major activities relating to the development and implementation of a college information system is provided for the purpose of presenting a conceptual activity plan. The third section describes the work in progress at Freed-Hardeman College where unit record (punch-card) equipment is still being used for data input preparation and for processing many applications that have not been converted to computer processing. Personnel of the college have demonstrated quite effectively that a small college has obtained the advantages of a low-cost, unit record system and the minimal cost of purchased computer time. The compatibility of its card processing system has been effectively coupled with the use of a computer on a part-time basis. The disadvantages of such an arrangement have been kept to a minimum through an adequately trained staff maintaining a high level of communication with the computer center. (Author/HS)

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A SMALL COLLEGE INFORMATION SYSTEM

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Report of an Administrative Improvement Project in Data Processing at
FREED HARDEMAN COLLEGE
Henderson, Tennessee

Fred K. Bellott and Sam W. Bliss

BUREAU OF EDUCATIONAL RESEARCH AND SERVICES
COLLEGE OF EDUCATION
MEMPHIS STATE UNIVERSITY
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Report of An Administrative
Improvement Project
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Freed-Hardeman College
Henderson, Tennessee

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PREFACE

During the past decade, higher education institutions have initiated and expanded the use of sophisticated data processing equipment on a broad front. The development of information systems technology and the use of third generation computers now provide program managers and administrators with information not available previously. In the headlong rush of data processors toward producing more information, cranking out reams of data, providing sophisticated multivariate analyses, and using complex statistical designs, the small institution has largely been forgotten. In our democratic society, where equality is presumed to exist for all organizations as well as for all people, this omission becomes a point of extreme concern to educational administrators, particularly to those in the small college.

It would be a mistake to assume that technology has provided equally for the institution of 1,000 enrollment and the institution of 30,000 enrollment. It would be equally false to assume that technology does not have anything to offer to the small college. It does. Small colleges can utilize computers effectively and efficiently if their uses are appropriately geared to their resources. Data processing service agencies, large business organizations with surplus computer time, and larger educational organizations that are not fully utilizing their computer capabilities can serve the small college by selling computer time. They can usually service these needs more easily than small colleges can serve themselves with their own computers. This eliminates the problem of paying for computer time that remains unused and having expensive equipment sitting idle and unproductive. It also reduces personnel costs because staffing is not required for a computer operation that belongs to someone else. Data processing technology can be thus utilized by the small institution operating within budgetary constraints imposed by size.

The need for timely and accurate statistical data was accentuated in the mid-sixties by the requirements of the U.S. Office of Education's Higher Education General Information Survey (HEGIS), the application forms for assistance under the Higher Education Act of 1965, and the approaching periodic self-study and visitation program of the Southern Association of Colleges and Schools.

Responding to this need, Freed-Hardeman College began the

development of the Small College Information System. Under Title III of the Higher Education Act of 1965 and with the cooperative assistance of the Bureau of Educational Research and Services, College of Education, Memphis State University, Memphis, Tennessee, and the Computer Center at Lambuth College in Jackson, Tennessee, the project began in 1966. The faculty and staff of Freed-Hardeman College were actively involved in the development of the system and in its operation and utilization.

Freed-Hardeman College is a private junior college related to the Churches of Christ that is located in Henderson, Tennessee, approximately 85 miles northeast of Memphis and 20 miles south of Jackson. In 1971-72, a faculty and administration of about 50 served some 850 students who had come from more than half of the 50 states and from overseas. More than 40 per cent of the students come from lower-income families and total costs for the academic year (tuition, fees, books, supplies, room and board) are below $2,000.

Established in 1908 as National Teachers Normal and Business College, the institution was renamed for its founders in 1919 and was reorganized as a junior college between 1923-25. It was accredited as a teacher training institution by the Tennessee State Board of Education in 1925 and became one of the early members of the American Association of Junior Colleges in 1928. Regional accreditation by the Southern Association of Colleges and Schools was received in 1956 and was reaffirmed in 1968.

The small college information system developed at Freed-Hardeman College and described herein is predicated on the use of purchased computer services from an external agency and low-level data processing equipment located in the small college. This is not a "Total Information System," it is not a panacea, and, more significantly, it is not unduly expensive. It is practical, it is in operation, and it is a useful administrative tool appropriate for the small college. The information system was developed as the result of a project for administrative improvement in a small private college.

On July 1, 1967, development of the system at Freed-Hardeman College began with the on-site installation of unit record equipment (accounting machine). The decision was made to use a remotely located computer on a part-time basis because of its promise for greater efficiency, shorter turn-around time, and expanded capabilities for providing administrative information

services.

A grant under Title III of the Higher Education Act of 1965 enabled Freed-Hardeman College to establish a cooperative arrangement with Memphis State University for assistance from its Bureau of Educational Research and Services for the initial development of the information system, including input and output forms. During 1967-68, consultants were drawn from the Memphis State University staff or were identified and brought to the Freed-Hardeman College campus by personnel of Memphis State University.

A second grant to continue the cooperative arrangement for further system development and for computerization of selected operations was requested and approved. Reports involving statistical calculations or data manipulation and requiring improved labeling and readability were chosen for off-campus computer processing, while accounting, listing, and addressing operations continued to be done on campus. Under a subcontract with the Bureau of Educational Research and Services, Lambuth College agreed to write, test, and conduct initial runs of the necessary computer programs. Tom Edenton, then director of Lambuth's Computer Center, assumed the responsibility for the computerization of the selected reports. Upon completion of the subcontract, Edenton left Lambuth College to pursue advanced studies, and Lambuth College discontinued the computer processing of the data from Freed-Hardeman College. An arrangement was made with the Southern College of Optometry at Memphis for computer services, and the programs, with some modification, are being used there to produce the required reports.

Appreciation is due Dr. C. C. Humphreys, President of Memphis State University, for his encouragement of the institutional cooperation and assistance extended to Freed-Hardeman College through the Bureau of Educational Research and Services, College of Education. The first Title III, HEA, cooperative program for administrative improvement through data processing applications was coordinated for Memphis State University by Dr. E. G. Bogue, then Director of Records, Office of Admissions and Records. The present Title III project is based on systems analysis work begun in July, 1967, by Dr. Bogue and Dr. J. D. Thomas, coordinator for Freed-Hardeman College, then Assistant to the Dean, and now Academic Dean. Most of the input forms and output formats were developed by these coordinators. Dr. E. Claude Gardner, who in 1967 was Dean and is now

President of Freed-Hardeman College, has continuously supported the projects with encouragement and budgetary assistance.

Dr. Fred K. Bellott, the current Memphis State University coordinator and co-author of this report, provided valuable assistance as a consultant in the earlier part of the project. He was then the assistant director of the Midwestern States Educational Information Project. He and Dr. James W. Colmey, his predecessor as Director of the Bureau of Educational Research and Services, Memphis State University, provided planning and management assistance for this project.

J. Walker Whittle, chairman of the Department of Business Administration, Freed-Hardeman College, was responsible for the daily operation of project activities during the fiscal year 1969-70. The project was continued through the fiscal year 1970-71 by three faculty members of Freed-Hardeman College who served as project coordinators: Joe P. Hardin, Bursar; Reeder Oldham, Dean of Admissions and Records; and William O. Hobby, Director of Data Processing. Computer programming and testing was done by Tom Edenton, computer center director at Lambuth College, Jackson, Tennessee, under a subcontract.

Dr. Sam W. Bliss, Director of the Educational Resource Management Center at Northern Arizona University, Flagstaff, Arizona, served as a project consultant and assisted in writing the report. The staff of the Bureau of Educational Research and Services at Memphis State University edited the report and prepared it for publication.

INTRODUCTION

Sections I through III present basic conceptual components associated with the development and implementation of a college information system. Section I presents the rationale for college information systems and establishes the need for improving information systems. Such a need precipitated the development of the information system described in this document.

The major characteristics essential to the design and implementation of a college information system are discussed in Section II. Also, a generalized network of major activities relating to the development and implementation of a college information system is provided for the purpose of presenting a conceptual activity plan. Refinement of the network activities will be necessary should college officials decide to follow the suggested outline.

Section III describes the work in progress at Freed-Hardeman College where unit record (punch-card) equipment is still being used for data input preparation and for processing many applications that have not been converted to computer processing. Personnel of the college have demonstrated quite effectively that a small college can use a combination of unit record equipment and purchased computer time for certain types of data processing. The college has obtained the advantages of a low-cost, unit record system and the minimal cost of purchased computer time. The compatibility of its card processing system has been effectively coupled with the use of a computer on a part-time basis. The disadvantages of such an arrangement have been kept to a minimum through an adequately trained staff maintaining a high level of communication with the computer center. Although by some standards progress may have seemed slow, it has advanced steadily, and the college has gained many benefits.

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I

CONCEPTS AND RATIONALE RELATING TO THE SMALL COLLEGE INFORMATION SYSTEM

NEEDS RATIONALE
USE RATIONALE

CONCEPTS AND RATIONALE RELATING TO THE SMALL COLLEGE INFORMATION SYSTEM

This section presents a rationale for college information systems, predicated on the need for accurate, serviceable data to describe and strengthen the activities of colleges. The need exists in the internal operations of the colleges and in their function as components of a changing society. Content centers primarily on current uses of information systems in higher education and describes basic requirements for the development of an adequate system broadly compatible among institutions.

NEEDS RATIONALE

Colleges and universities are experiencing an increasing need to have timely, dependable data regarding their responsibilities and activities. This need will not lessen but will become more critical because of the growing complexity of internal operations and of college relationships to individuals and other organizations. Furthermore, the greater emphasis being given to the planning function at all levels of government, i.e., federal, state, and local, which is so necessary for the public support of the colleges and for internal planning within the colleges, demands better information and information systems.

Currently, however, the collecting, recording, processing, and reporting of information needed by college officials and staff are typically inadequate in both quantity and quality. Lack of consistency in the definition of terms and in compatible coding structures restricts the utility of data needed by college staffs. Also, in many instances, college officials have had to engage in extensive manual processing of files and records. The resulting report was usually a one-time effort, and the acquired information was not usable again in meeting other information needs. Such procedures have resulted in expensive, tedious, and inadequate final analyses. In toto, past experiences indicate that an improved system for acquiring, processing, and communicating data must be adopted if colleges are to become capable of recording, analyzing, and

reporting their activities effectively within the constraints of a reasonable expenditure of money and time.

USE RATIONALE

In developing an adequate information system for colleges, it is necessary to establish a comprehensive viewpoint regarding the provision of data to be included in the system. Adherence to this viewpoint leads to the possible classification of college data needs into three broad categories: (1) data needed in the daily operation of the college, (2) general data for summary reporting that describes quantitatively the status of a given situation or operation at a particular point in time, and (3) data for generating management information to assist college administrators in making operational decisions and in conducting long range planning and projection functions essential to the effective governance of institutions.

Daily Operations

Until the past few years, the functions of generating, collecting, recording, and storing of data in most colleges were performed by each of the divisions in the college. These divisions were largely separate and independent, and, for the most part, they defined and conducted their own procedures for collecting, processing, and reporting data. This practice, labeled "traditional," resulted in a number of fairly independent informational systems being formed within the college. Thus, there developed the registrar's system, the systems of the academic deans, and various other systems of administrative officials. Usually, the business official's system was developed in isolation from other systems. The development of management information systems to meet the needs of colleges has been an erratic, uncoordinated effort that encouraged inefficiency and redundancy without fully satisfying management needs.

This "traditional" practice of information systems development has resulted in much overlapping, confusion, and conflict in

reporting information. For example, in many colleges the list of full-time members of the faculty will vary according to the particular office or division of the college supplying the list. This is also the case when a listing of full-time or part-time students fails in accuracy and/or consistency under the present systems.

It is clear that any information system must provide for the daily operational needs of the institution. Van Dusseldorp has stated, "Information needed for a college to function can be divided into three levels – (1) information for management systems, (2) information for control, and (3) information for operations."[1] Even though these three levels have been identified and accepted, the function that is served by any specific data may vary; sometimes the same data may serve more than one level of information need.

Reporting Needs

Various kinds of reports are required from colleges by educational organizations, government agencies, and other concerned institutions, associations, and individuals. The nature of the information reported has seldom been determined through the cooperative work of the institution reporting and the organization requesting the information. For example, the state organizations and the federal agencies, such as the U.S. Office of Education, have regularly requested information from institutions regarding students, employees, facilities, finances, degrees conferred, etc. This kind of information collecting typically results in reports that are largely summary aggregations of the data reports prepared in various college offices and received from a group of institutions. These result in publications that presumably give a quantitative description of the status of education existing in the respondent institutions at the time the information was reported.

The standardization of reported information and individual data items has been sought by such organizations as the American Association of Collegiate Registrars and Admissions Officers (AACRAO), which, in 1962, sponsored the publication of the *Handbook of Data and Definitions in Higher Education.* Volume 1 and Volume 2 of *College and University Business Administration* have recently been revised to meet more nearly current needs.

Also, the Western Interstate Commission for Higher Education (WICHE) is currently involved in a large, cooperative research and development effort to provide a management information system with common data elements in institutions of higher education. A detailed explanation of the WICHE program is available in a publication titled *Objectives and Guidelines of the WICHE Management Information Systems Programs*.

In these various program efforts, the use of compatible and standard data items has been sought, yet much remains to be accomplished in defining and clarifying even basic data items. At the present time, individual offices in the various colleges have evolved and have used definitions that suit their own purposes. It will be necessary to develop and implement an overall system within each institution that is compatible with various state and federal reporting requirements if educational statistics are to provide consistent and useful information meaningful throughout an institution and comparable for institutions throughout the nation.

Decision Making

The needs and uses of information to aid in decision making have increased in importance for all colleges in all areas. Because colleges have grown rapidly and are increasingly complex, their management and operations can no longer depend upon increasing the number of professional and clerical staff members without the coordination of information gathering and reporting. Too, colleges are now moving toward a new and different relationship with society, particularly with certain groups within society.

In addition, the nation has experienced the beginning of a new era – the era of technology – which places new demands on the colleges. Economically, the people of this society are becoming more dependent upon colleges for education, trained manpower, utilization of knowledge, and development resulting from research. The investment of industry and government has been greatly increased as the result of the recognition of colleges as a primary resource essential to the economic growth of business and the nation.

These new pressures, responsibilities, and challenges emphasize the need for intelligent decisions, and the difficulty in making

them requires educational leadership, long-range planning, and efficient operations. Educational management relates directly to the planning, organization, directing, and control of functions. Two primary needs can thus be identified as management needs for information. Educational management decisions at the college level must be made appropriately if their decisions are based on the use of information that is timely and accurate. The technology of information retrieval through the use of modern, automated information systems must be employed in college educational administration. An adequate information system utilizing the technology of data processing is required for the instructional research and supportive service areas of college operations.

Information that is required for intelligent decision making and planning is different from the kind needed for special reports and daily operations. A system must be designed to meet the specific needs of operations, management, and reporting. College officials must, through analysis, define and describe entirely the parameters of data needed within the institution before launching into the purchase of expensive machines and software to operate the machines.

Certain basic procedures and guidelines regarding the design of an information system for colleges are outlined in the next section. Although these will be general in nature, they are intended to be thought-provoking, and they should enable the administrator to be cognizant of considerations that deserve his attention.

Footnote

[1]Kenneth J. McCaffrey and Ralph A. Van Dusseldorp, eds., *Proceedings of the National Conference on State Educational Information Systems* (Des Moines, Iowa: State of Iowa Department of Public Instruction, 1966.)

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II

THE DESIGN AND IMPLEMENTATION OF THE SMALL COLLEGE INFORMATION SYSTEM

GENERAL CONSIDERATIONS
BASIC SYSTEM DESIGN
IMPLEMENTATION NETWORKS

THE DESIGN AND IMPLEMENTATION OF THE SMALL COLLEGE INFORMATION SYSTEM

GENERAL CONSIDERATIONS

The organization of information, no matter for what systems purpose, is accomplished by a taxonomy of classifications and definitions and a hierarchical system of categories. These structures serve to determine both the effectiveness and efficiency of the organization of information and its limitations. Therefore, the identification and establishment of basic information structures are matters of utmost importance.

The first consideration that determines the development of the classifications and definitions is that these must directly relate in some fashion to the things they purport to classify. This is to say, the categories and classifications used in reflecting the college situation are derived from the needs for and uses of information in this type of institution. Also, information categories must relate to the college environment as it is and must be constructed of elements that are relevant to their intended purposes. No doubt, some arbitrary decisions will occur to resolve overlapping situations. Yet, in the final analysis, the arrangement of classifications and categories must take into account the real nature of the college environment and should not misrepresent the organization.

A second consideration is that data must exist in the most simple, discrete, basic form that is irreducible in nature in order to increase basic economy at the source of origin and to more readily define and standardize such data.

A third factor to consider is that the totality of data contained in the system and the information that can be generated by the system must provide an adequate picture of the entire college. Provided with a reasonably complete body of information, college officials and staffs have the potential for developing answers to a large number of complex problems. This information should encompass faculty, students, curricula, facilities, finance, and social and economic factors of the public milieu.

Thus, the design and implementation of any information system must rest upon a thorough and sound analysis of the subject matter with which it deals.

BASIC SYSTEM DESIGN

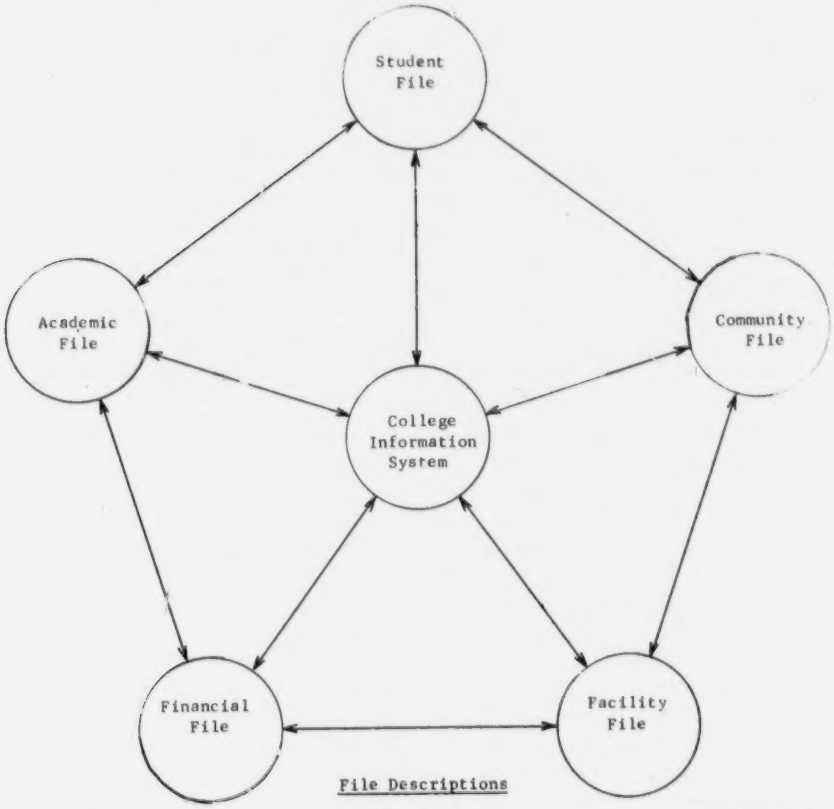
Fundamentally, the system design must reflect the basic needs of the users and insure that they are recognized and provided for to the maximum extent feasible. Also, the sources of data must be given due consideration. Schematically, an information system for a college may be portrayed as shown in Figure 1, a design of five basic files: academic, facility, student, financial, and community. The number of files is arbitrary; however, the five suggested do cover the primary use areas and sources of data. The brief listing shown by each file is suggestive in nature and should not be construed as being exhaustive. The double-headed arrows indicate that the data flows among and between the files. The design does not necessarily imply the use of a computer or other electronic data processing equipment. It is possible to process the data manually in certain situations where the mass of data is small. However, when the mass of data becomes large, it may be necessary to use the services of a computer, either part-time or full-time, whichever is feasible.

By using an appropriate coding and special identification number with each of these data files, students and staff can be linked with organizational level, division, and finances. Once the basic files are defined, it is then necessary to identify the simple basic data items applicable to each file. Thus, a master list is developed that identifies all data items to be included in each file.

Following the development of the master list the system must provide for the creation of a coding structure for each classification of data items. Also, collection forms, processing instructions, storage and retrieval procedures, and dissemination directions must be developed for the systems. Examples of coding structures used in the system at Freed-Hardeman College are included in Section III.

No attempt is made in this report to describe all of the minute details involved in developing and implementing a small college information system. Rather, it is intended that the conceptual viewpoint will provide direction that can be useful to those seeking the development of such a system. Details are included as examples, or as a part of the description of the system where deemed important.

Figure 1
A COLLEGE INFORMATION SYSTEM·DESIGN



File Descriptions

Academic File
Class Size
Course Offering
Curriculum Planning
Institutions Research
Extension Courses
Adult Continuing
Faculty & Faculty Load

Student File
Admissions
Registrations
Scheduling
Master Data Base
Student Fees
Housing
Address Lists
Research

Community File
Alumni
Foundations
Individuals
Government Bodies
Research
Address Lists

Financial File
Budget Development
Budget Adjustments
Accounting & Control
Payroll
Encumbrance
Disbursements
Revenue
Special Projects

Facility File
Building Inventory
Equipment Inventory
Space Utilization
Land Inventory
Facility Planning
Construction

IMPLEMENTATION NETWORKS

The conceptual plan for developing and implementing an information system should be formulated well in advance of any actual implementation and operationalizing activities. A planning network is a useful tool with which to formulate the conceptual plan. The planning network should identify the major tasks and activities that are essential to the development and implementation of the information system. It should also reflect the sequential relationships of those activities and their relative interdependence. Time and effort required to develop the network will be justified through its provision for management of a graphic depiction of the step-by-step process of the development of the system and of an up-to-date monitoring of the installation of new procedures, personnel, and hardware.

It is necessary for the developer of the system to provide the conceptual plan designed to show the major activities essential to the development and implementation of the information system. The network shown in Figure 2 describes this task. The Conceptual Activity Plan for Information System Development is based on discretionary decisions and is divided into three major phases of activities. Phase One includes the problem definition, objectives, and development of the data items to be included in the major data files. Phase Two lists the major activities relating to the design of the system, data files, and the testing of the usefulness of the system. Phase Three provides a description of the major activities associated with the conversion to the new system, time schedule, operating procedures, data collection, and evaluation of the new system. Although the Conceptual Activity Plan is general, college officials can use it as a guide, and, with appropriate modification, it will be of assistance in the implementation of an information system.

Figure 2
CONCEPTUAL ACTIVITY PLAN FOR INFORMATION SYSTEM DEVELOPMENT

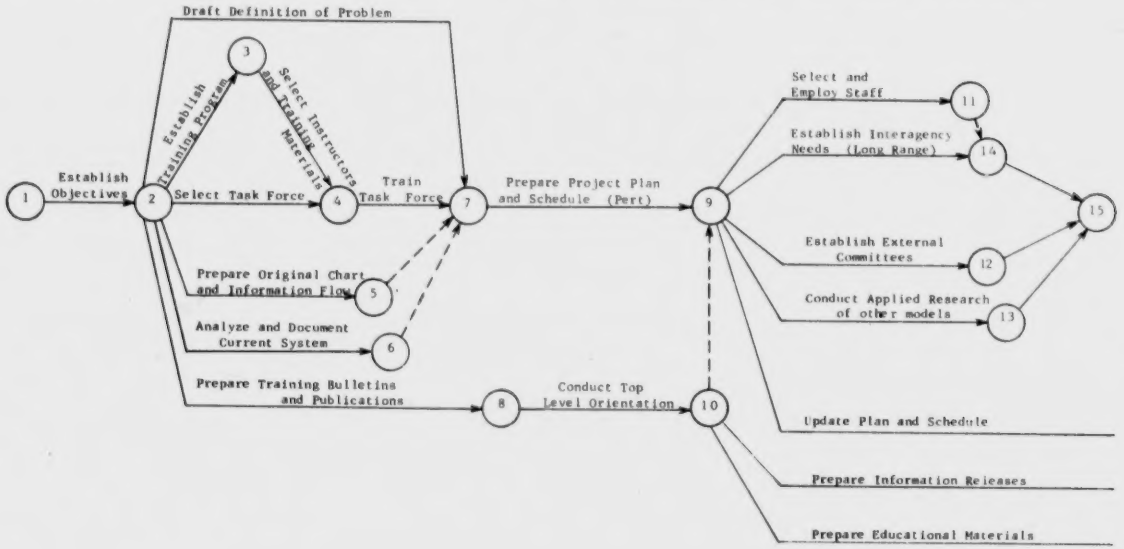


Figure 2 (Continued)

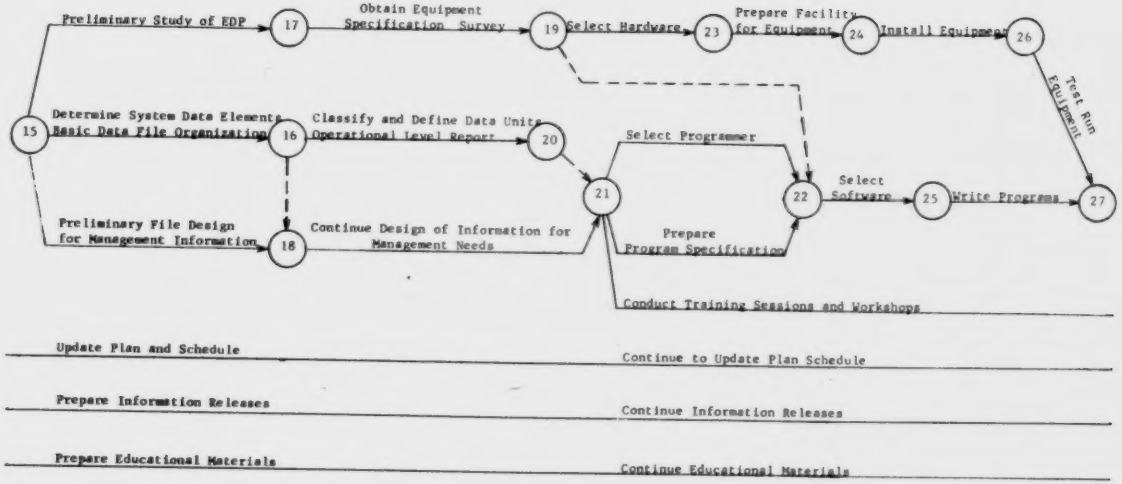
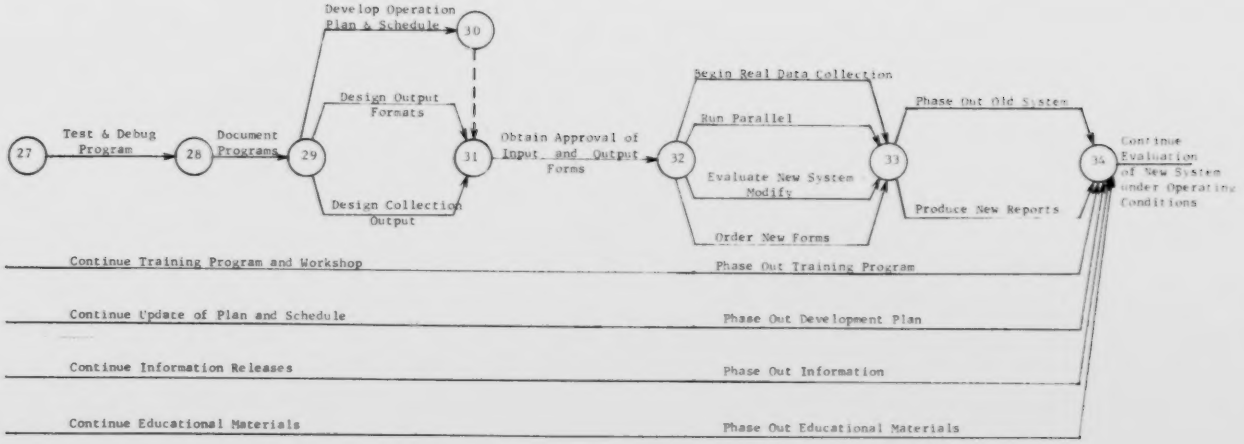


Figure 2 (Continued)



III

DESCRIPTION OF THE WORK IN PROGRESS AT FREED-HARDEMAN COLLEGE

STATEMENT OF INSTITUTIONAL PURPOSES
DATA PROCESSING EQUIPMENT
DATA COLLECTION FORMS
FLOW CHARTS
DATA OUTPUT

DESCRIPTION OF THE WORK IN PROGRESS AT FREED-HARDEMAN COLLEGE

This part of the report is descriptive of the progress of Freed-Hardeman College in developing its information system. It provides the reader with the structure of data files included in the system; a listing of the equipment being utilized by the college to collect, process, and disseminate the information; a description of the basic data collection forms that serve as means of input into the system; sets of generalized flow charts showing the basic programming steps of each computer application; and also includes examples of the various reports (data output) currently being utilized by the college.

The college utilizes a basic unit record system for processing the 80-column punched card with the IBM 402 Accounting Machine as its basic equipment. It also uses off-campus computer service to assist in the processing of data as a supplementary tool on a limited time basis. It is able to take advantage of the computer's speed and flexibility but does not have to sustain the full annual rental costs. Thus, it is able to hold data processing expenditures to a reasonable cost figure. The college has started a long-range program of converting as many of its data processing applications as are feasible and practical to the combined use of its card processing equipment and the selective use of a computer.

The report depicts a college in the process of implementing a small college information system, but it should not be viewed as having fully completed all such activities. The information system is a dynamic system, evolving as needs become apparent, changing as the organization it serves changes, growing as the institution grows, and increasing in sophistication and responsiveness as people become more familiar with the capabilities of the system and as reporting needs change or as users request additional information.

STATEMENT OF INSTITUTIONAL PURPOSES

The purposes of Freed-Hardeman College are to provide an educational experience, environment, and opportunity that will

nourish and develop those intellectual, religious, social, and physical qualities necessary to a meaningful, useful, and satisfying life. Freed-Hardeman College offers university-parallel courses, activities, and resources designed to promote student growth, and it emphasizes general education, guidance and personal attention, excellence in teaching, and preparation either for employment or upper-division and professional specialization. As a Christian college, it seeks to promote spiritual, intellectual, social, and physical growth.

In accomplishing its purpose, the college seeks to enable and encourage each student to achieve in the following areas:

Christian Growth
Understanding of the Cultural Heritage
Effective Thinking and Communication
Aesthetic Appreciation
Responsible Home Life
Understanding of the Natural World
Personal Health
Democratic Citizenship
Social Development
Preparation for Advanced Study and Employment

Thirteen departments prepare students for forty-one majors in Bible, business, education, liberal arts, and pre-professional programs. Three-fourths at the college's Associate in Arts graduates continue or transfer into baccalaureate programs and many go on to graduate studies.

DATA PROCESSING EQUIPMENT

Freed-Hardeman College utilizes its own unit record equipment and purchases part-time services on a computer located at the Southern College of Optometry, Memphis, Tennessee. Figure 3 identifies the unit record equipment owned by Freed-Hardeman College; Figure 4, the configuration of data processing equipment used to support the part-time computer services purchased initially from Lambuth College, and later from Southern College of Optometry.

Figure 3

DATA PROCESSING EQUIPMENT
AT FREED-HARDEMAN COLLEGE

1	402-855	Accounting Machine with Additional Selectors
1	526	Printing Summary Punch with Interspersed Gang Punch
1	082	Model 50 Sorter
1	085	Model 50 Collator
1	029	Key Punch
1	059	Verifier

Figure 4

DATA PROCESSING EQUIPMENT SUPPORTING
OFF-SITE PURCHASED COMPUTER SERVICES

1	IBM	1130 Model 2B, 8K CPU, w/Disk*
1	1442	Model 7 Reader-Punch 400 CPM
1	1403	Printer - 340 LPM
2	029	Key Punch

*The 1130 IBM Computer at Southern College of Optometry has 32K storage instead of 8K.

All data preparation is done at Freed-Hardeman College. Input data are hand-delivered to the computer center at the Southern College of Optometry in the form of punched cards and format descriptions of the expected output data.

With the support capabilities of unit record equipment located on-site on the Freed-Hardeman College campus, the remote location of the computer has not been a serious constraint. Many of the functions which the computer serves could also be fulfilled

using only unit record equipment. The benefits of the computer are largely (1) improved turn-around time, (2) expanded capability of matrix generation, (3) reduction of redundancy at the data input level, (4) the provision to management of reports that provide precisely and meaningfully the information needed, and (5) more complete labeling of reports, with fewer numeric codes to be deciphered.

The first computer applications for the Freed-Hardeman College information system were performed at Lambuth College on the IBM 1130 computer. Flow charts and computer programs were written at that time for each application in an independent mode so that operational data needs were not delayed while awaiting the full development of the whole system. All programs had stand-alone capability. A later section of this report, entitled "Flow Charts," is descriptive of the application programs at the time they were developed as singular programs.

After one year of operation, computer services, which had been obtained from Lambuth College, were secured from the Southern College of Optometry. At that time, the series of independent applications began to take on more of the characteristics of an information system. A Mainline Control Program was written to provide for the use of interacting files and programs. The Mainline Control Program, which was stored on a disk, was used to access another program or family of programs. These in turn, provided the application, or access, to sub-programs from which a specific program sub-routine, or other functional operation, could be selected for the application.

The use of the Mainline Control Program did not materially change the application programs, only the manner in which they were used. Some modifications were made where interacting files and/or programs yielded greater efficiency, as where evident redundancies occurred. Programming language remained the same; computer internal storage requirements increased from 8k to 16k. These modifications are not reflected in the flow charts or other technical descriptions and materials in this report. However, they are available from the Freed-Hardeman College upon request. The manner in which the files are operated is shown in the description of the FHC Operating Programs.

FHC OPERATING PROGRAMS

MAINLINE CONTROL PROGRAM

1. **LOAD OPTIONS**
2. **LISTING OPTIONS**
3. **SUMMARIES**
4. **REPORTS (FILE SORT)**
5. **STUDENT REGISTRATION CHARGES**
6. **STUDENT SCHEDULE**
7. **CHECK MASTER CARDS**

1. **LOAD OPTIONS**

    1. CLASS CARDS
    2. MASTER CARDS
    3. ENROLLMENT REGISTER
    4. COUNTIES
    5. STUDENT SCHEDULE HEADINGS
    6. HOME TOWNS
    7. MAJORS
    8. PARENT NAMES AND ADDRESSES
    9. QUALITY POINTS AND HOURS
    10. STATES
    11. TEACHERS
    12. COURSES OFFERED THIS SEMESTER
    13. NEW SELECTION

2. **LISTING OPTIONS**

    1. CREDIT HOURS BY CLASS AND DEPARTMENT
    2. ENROLLMENT BY CLASS AND DEPARTMENT
    3. ENROLLMENT BY SEX AND CLASS
    4. ENROLLMENT BY STATE (FILE SORT)
    5. FIRST TIME ANY COLLEGE
    6. FRESHMEN BY STATE
    7. GRADES ON DATA MAILERS
    8. GRADE OF FIEWXUP
    9. NEW TRANSFER STUDENTS
    10. READMISSIONS
    11. RELIGIOUS INFORMATION
    12. STUDENTS BY RESIDENCE CODE
    13. STUDENTS EXPECTING TO FINISH
    14. STUDENT BY COUNTY (FILE SORT)
    15. STUDENT NAME, ADDRESS AND BOX NUMBER

16. STUDENT BY SEX, RACE AND NATIONALITY
17. TRANSCRIPTS, PUNCH CUMULATIVE RECORDS AND LIST HONOR AND SUSPENSIONS
18. TEACHER LOAD
19. FILE MAINTENANCE

3. SUMMARIES

1. GRADES BY TEACHER
2. GRADES BY COURSE
3. GRADES BY SEX
4. GRADES BY CLASS
5. GRADES BY DEPARTMENT

4. REPORTS

1. RESIDENTIAL STATUS
2. MARITAL STATUS
3. ENROLLMENT

5. STUDENT REGISTRATION CHARGES

6. STUDENT SCHEDULE

7. CHECK MASTER CARDS

OLD AND NEW PROGRAM DESIGNATIONS

	LC	SCO	
CHECK:			
1.	FHC51	FHC01	Checks parameters for 2 card master set.
LOAD:			
1.		FHL01	Loads class card to file FHCl4.
2.	FHC66	FHL02	Loads codes for enrollment register to file FHC67.
3.	FHC27	FHL03	Loads counties to file FHC28.
4.	FHCHD	FHL04	Loads headings for student schedule to file FHC13.
5.	FHC37	FHL05	Loads home town to file FHC36.
6.	FHC30	FHL06	Loads majors to file FHC31.
7.	FHC41	FHL07	Loads master cards to file FHC16.
8.	FHC74	FHL08	Loads parent name and address to file FHC75.

9.	FHC76	FHL09	Loads quality points and hours to file FHC77.
10.	FHC25	FHL10	Loads states to file FHC26.
11.	FHC02	FHL11	Loads teachers to file FHC12.

LISTS:

1.	FHC01	FHA01	Classes.
2.	FHC56	FHA02	Credit hours by class and department
3.	FHC55	FHA03	Enrollment by class and department.
4.	FHC70	FHA04	Enrollment by sex and class.
5.	FHC29	FHA05	Enrollment by state.
6.	FHC71	FHA06	Enrollment by state.
7.	FHC72	FHA07	Enrollment by state.
8.	FHC38	FHA08	First time any college.
9.	FHC73	FHA09	Freshmen by state.
10.	FHC60	FHA10	Grades.
11.	FHC65	FHA11	Grade of FIEWXU.
12.	FHC62	FHA12	Honor and suspensions.
13.	FHC54	FHA13	Major field by class.
14.	FHC21	FHA14	New transfer students.
15.	FHC3A	FHA15	Readmissions.
16.	FHC20	FHA16	Religious information.
17.	FHC11	FHA17	Students alphabetically by residence code.
18.	FHC26	FHA18	Students by county.
19.	FHC12	FHA19	Students directory.
20.	FHC24	FHA20	Students expecting to finish.
21.	FHC53	FHA21	Student load by sex and class.
22.	FHC35	FHA22	Students by name, address and classification.
23.	FHC22	FHA23	Students by sex, race and nationality.
24.	FHC65	FHA24	Student registration charges.
25.	FHC61	FHA25	Transcripts, rebuild cumulative records and files.

SUMMARIES:

1.	-	FHS01	Summary of grades by teacher.
2.	-	FHS02	Summary of grades by course.
3.	FHC66	FHS03	Summary of grades by sex.
4.	-	FHS04	Summary of grades by class.
5.	-	FHS05	Summary of grades by department.

REPORTS:

1.	FHC40	FHR01	Hourly report by residential status.
2.	FHC23	FHR02	Marital status report.
3.	FHC58	FHR03	Report of enrollment by class hour, day and department.

SCHEDULE:

1.	FHC03	FHB01	Student schedule.

SORTS:

1. FHC5A FHD01 Sorts by major and class.
2. FHC50 FHD02 Sorts grade file into alpha order.
3. SORTS FHD03 Sorts class card file for class list.

SUBPROGRAMS:

1. ISOR FHX01 Function
2. ERRl FHX02 Subroutine
3. HEADl FHX03 Subroutine

FREED-HARDEMAN DISK FILES

FHC14	2002	850	6800,40	Class card file	6800
FHC16	2002	600	1200,160	Master card file	1200
FHC79	2002	24	500,15	Error file for no address	500
FHC80	2002	20	200,32	President's list	200
FHC81	2002	20	200,32	Dean's list	200
FHC82	2002	20	200,32	Probation list	200
FHC83	2002	20	200,32	Suspensions	200
SOR33	2002	20	200,32	Sort file	
		1574	.....	Define Fixed Area at 198 cylinders	
FHC75	2001	150	1200,40	Address file	1200
FHC67	2001	4	50,24	Codes for enrollment register	50
FHC13	2001	3	3,320	Heading file (student schedule)	
FHC28	2001	5	100,15	Counties	100
FHC36	2001	120	1200,32	Home town	1200
FHC31	2001	5	80,20	Majors	80
FHC77	2001	60	1200,16	Quality point file	1200
FHC26	2001	4	64,20	States	64
FHC12	2001	7	101,20	Teacher's file	101
FHC15	2001	20	20,320		
FHC5B	2001	3	3,320	Sort file index	
FHC20	2001	32	51,220	Courses offered this Semester	512
FHC21	2001	2	2,320	Section Numbers of FHC20	2
		415	.....	Define Fixed Area 54 Cylinders	

DATA COLLECTION FORMS

The student file at Freed-Hardeman College contains the basic data from which a number of reports and listings are generated. When these data elements are merged with data from the other files (e.g., academic file), additional reports are produced for instructional program management purposes. The initial applications of this system which were put on the computer were those based on the student file.

The flow of student information into the system is depicted by the flow chart seen in Figure 5. For the small college information system utilizing unit record equipment as the primary source of data processing service, all other files would follow the same flow.

Original data input forms for collecting student data are included here as an integral part of the system. (See Figures 6-11.) These data are collected during or prior to registration and punched onto cards from the forms completed by students. The data input forms for the student file are as follows:

1. Student Information File Cards
2. Application for Admission Freed-Hardeman College
3. Registration Information
4. Trial Schedule
5. Change of Schedule
6. Coding Forms

The details of data flow and report generation throughout the rest of this publication will be limited to data processing applications utilizing data from the student file. It is readily apparent that the principles involved in use of the student file can be applied in similar manner to the use of the other files in the system.

Figure 5

SMALL COLLEGE INFORMATION SYSTEM FLOW CHART

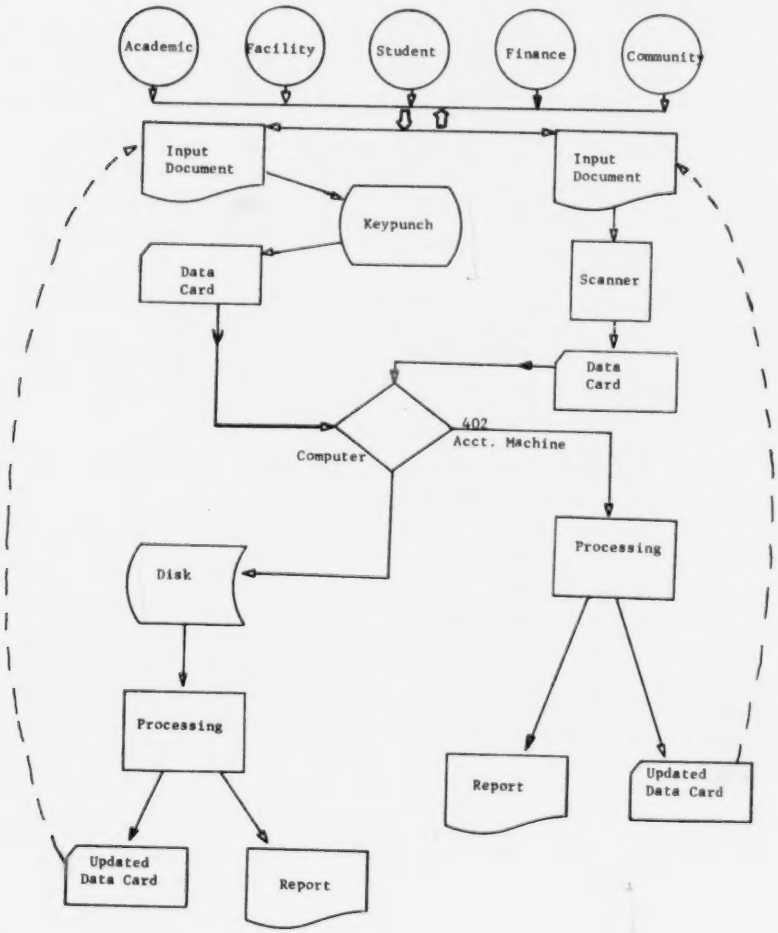
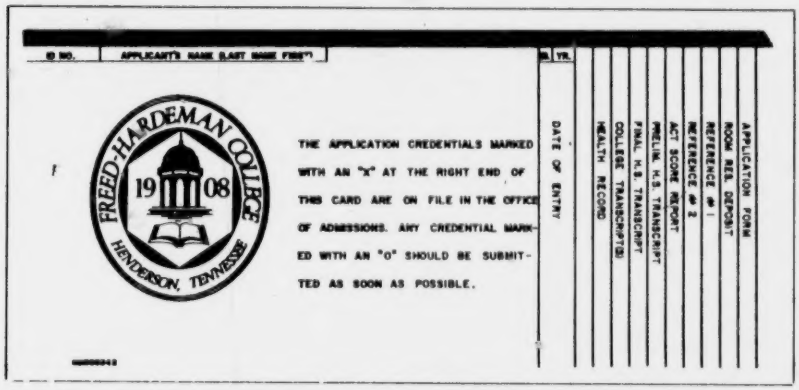


Figure 6

STUDENT INFORMATION FILE CARDS


ID NO.
APPLICANT'S NAME (LAST NAME FIRST)
FREED-HARDEMAN COLLEGE
19 08
HENDERSON, TENNESSEE
THE APPLICATION CREDENTIALS MARKED WITH AN "X" AT THE RIGHT END OF THIS CARD ARE ON FILE IN THE OFFICE OF ADMISSIONS. ANY CREDENTIAL MARKED WITH AN "O" SHOULD BE SUBMITTED AS SOON AS POSSIBLE.
DATE OF ENTRY
HEALTH RECORD
COLLEGE TRANSCRIPT(S)
FINAL H.S. TRANSCRIPT
PRELIM. H.S. TRANSCRIPT
ACT SCORE REPORT
REFERENCE # 2
REFERENCE # 1
ROOM RES. DEPOSIT
APPLICATION FORM

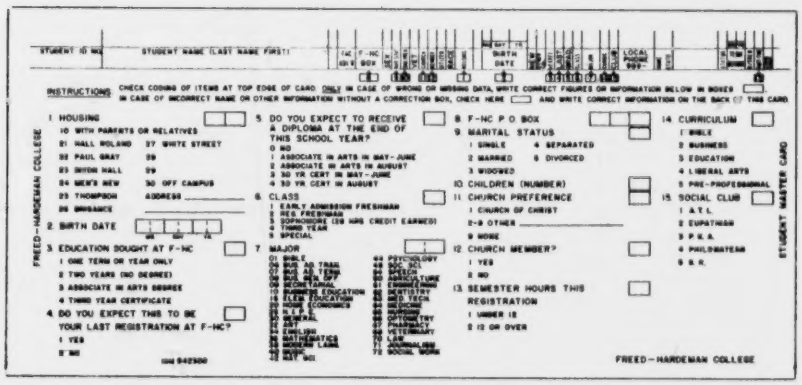
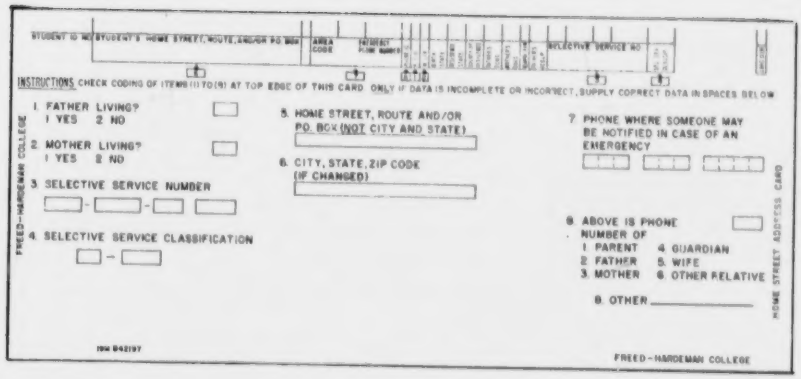

STUDENT ID NO.
STUDENT NAME (LAST NAME FIRST)
INSTRUCTIONS
1. HOUSING
2. BIRTH DATE
3. EDUCATION SOUGHT AT F-HC
4. DO YOU EXPECT THIS TO BE YOUR LAST REGISTRATION AT F-HC?
5. DO YOU EXPECT TO RECEIVE A DIPLOMA AT THE END OF THIS SCHOOL YEAR?
6. CLASS
7. MAJOR
8. F-HC P O BOX
9. MARITAL STATUS
10. CHILDREN (NUMBER)
11. CHURCH PREFERENCE
12. CHURCH MEMBER?
13. SEMESTER HOURS THIS REGISTRATION
14. CURRICULUM
15. SOCIAL CLUB
FREED-HARDEMAN COLLEGE
STUDENT MASTER CARD
FREED-HARDEMAN COLLEGE

Figure 6 (continued)


STUDENT ID NO.
STUDENT'S HOME STREET, ROUTE, AND/OR PO. BOX
AREA CODE
TELEPHONE NUMBER
SELECTIVE SERVICE NO.
INSTRUCTIONS CHECK CODING OF ITEMS (1) TO (9) AT TOP EDGE OF THIS CARD ONLY IF DATA IS INCOMPLETE OR INCORRECT, SUPPLY CORRECT DATA IN SPACES BELOW
1. FATHER LIVING? 1 YES 2 NO
2. MOTHER LIVING? 1 YES 2 NO
3. SELECTIVE SERVICE NUMBER
4. SELECTIVE SERVICE CLASSIFICATION
5. HOME STREET, ROUTE AND/OR PO. BOX (NOT CITY AND STATE)
6. CITY, STATE, ZIP CODE (IF CHANGED)
7. PHONE WHERE SOMEONE MAY BE NOTIFIED IN CASE OF AN EMERGENCY
9. ABOVE IS PHONE NUMBER OF
1. PARENT 4. GUARDIAN
2. FATHER 5. WIFE
3. MOTHER 6. OTHER RELATIVE
8. OTHER
FREED-HARDEMAN COLLEGE
HOME STREET ADDRESS CARD
FREED-HARDEMAN COLLEGE

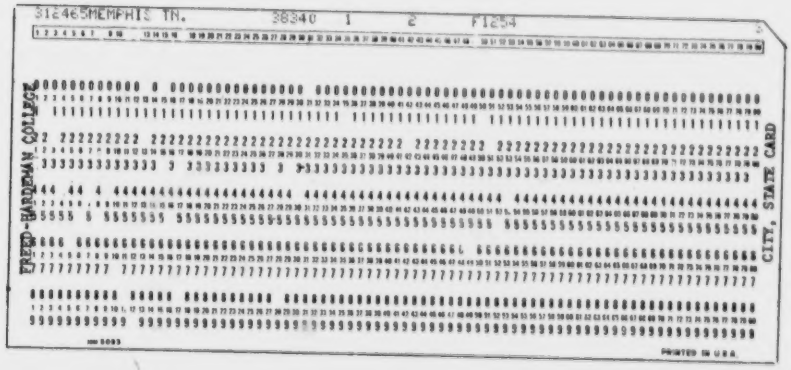
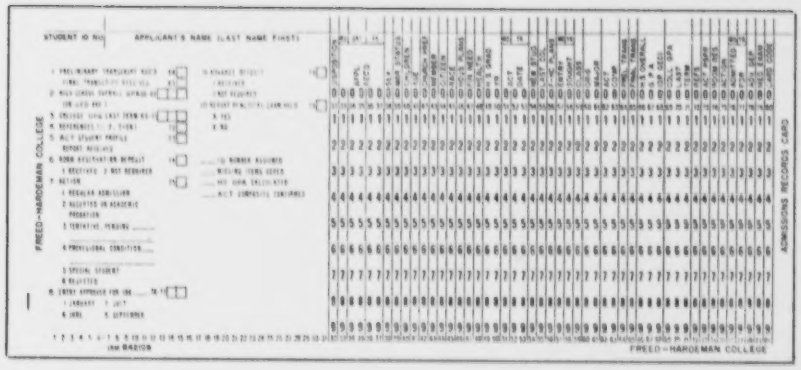


Figure 6 (continued)



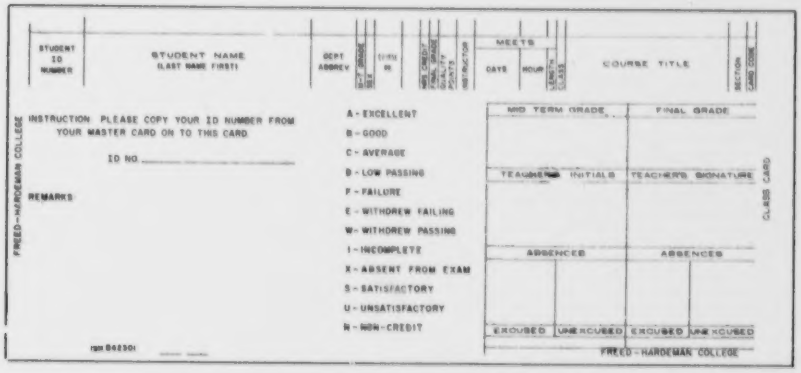


Figure 7

APPLICATION FOR ADMISSION
FREED-HARDEMAN COLLEGE

APPLICATION FOR ADMISSION
FREED-HARDEMAN COLLEGE
Henderson, Tennessee 38340

Please fill out and mail this form to Office of Admissions, Freed-Hardeman College, Henderson, Tennessee 38340. The information given below will be coded for, and processed by, data processing equipment for administrative and statistical use. Answer every question by **filling in the blank or circling the proper number.** If an answer requires added explanation, use a separate sheet and number the explanation with the item number.

1. Print your last name, first name, and middle initial (or name if there is room) in that order. Do not use nicknames. Print one letter to a square leaving one blank square between words.

Name (last name first)

2. Street, Route, or P. O. Box

City | State | Zip Code

3. Sex
   1 Female 2 Male
4. Marital Status
   1 Single 4 Separated
   2 Married 5 Divorced
   3 Widowed
5. Children
   0 None ____ Write Number
6. Age at enrollment: _____
   1 Under 21 2 21 or over
7. Church preference
   1 Church of Christ 6 Pentecostal
   2 Baptist 7 Presbyterian
   3 Catholic 8 Other: _____
   4 Christian 9 None
   5 Methodist
8. Are you a member? Name and address of congregation:
   1 Yes _____
   2 No _____
9. Citizenship
   1 U. S. 2 Other: _____
10. Are you a veteran?
    1 Yes 2 No
11. Will you be be receiving veteran's or dependent's benefits?
    1 Yes 2 No
12. Race
    1 White 3 Other: _____
    2 Negro
13. Housing plans
    1 Live with parents or relatives
    2 Dormitory
    3 Off-campus room, apartment or trailer
14. Financial aid
    1 Necessary 3 Not needed now
    2 Desired

    Please indicate the annual income of your parents, guardian, or you and your spouse:

    4 Under $3,000 7 $7,500-$9,999
    5 $3,000-$4,999 8 $10,000-$14,999
    6 $5,000-$7,499 9 $15,000 and over

15. Health
    1 Good; no handicap 3 Confined to wheel chair
    2 Legally blind 4 Special diet required
    5 Other: _____
16. Year of high school graduation (past or future): 19____
17. ACT test date (month and year you took or will take ACT test)
    _____, 19____
18. Is this your first enrollment at F-HC?
    1 Yes, new student 2 No, application for readmission
19. Circle the choice which applies to the LAST college (other than F-HC), you have attended.
    1 None
    2 Diploma or degree received
    3 Withdrew in good standing
    4 Withdrew on probation (date) _____
    5 Academic suspension or dismissal (date) _____
    6 Disciplinary suspension or dismissal (Attach explanation.)
    7 Armed Forces courses ONLY
    8 Currently enrolled
    9 Other: (Explain.) _____
    _____
    Name of last college attended: _____
    Names of other colleges attended: _____
    _____

    Transcripts of all college work in other colleges must be on file before you can be admitted to Freed-Hardeman. Please have these sent.
20. F-HC plans
    1 One term or year only 4 Third Year Certificate
    2 Two years (no degree) 5 Other: _____
    3 Associate in Arts degree _____
21. Class standing you anticipate:
    1 Early admission freshman (summer school before senior year of high school)
    2 Regular freshman 4 Third year
    3 Sophomore 5 Special
22. Month and year you desire admission or readmission:
    _____, 19____
23. Major field you plan to study: _____
24. ACT composite score (if known): _____

Figure 7 (continued)

25. Phone where someone may be notified in case of an emergency:
( ) – ( ) – ( )
Area code — Prefix — Number

Whose number have you given?
1 Parents
2 Father
3 Mother
4 Guardian
5 Wife
6 Other relative
7 Other: _____

26. Your father's name _____ 1 Living 2 Deceased
Birthplace _____ Church preference _____ Member? _____
Father's occupation _____
Your mother's name _____ 1 Living 2 Deceased
Birthplace _____ Church preference _____ Member? _____
Mother's occupation _____
Your guardian's name (if applicable) _____

27. City and state or nation of birth _____ Date of birth _____

28. State of current residence _____ 29. County of current residence: _____

30. Circle highest formal education of father or guardian:
1 2 3 4 5 6 7 8 9 10 11 12 — Years of Schooling
1 2 3 4 5 — College
Master's Degree
Doctor's Degree

31. Circle highest formal education of mother:
1 2 3 4 5 6 7 8 9 10 11 12 — Years of Schooling
1 2 3 4 5 — College
Master's Degree
Doctor's Degree

32. List the names and addresses of relatives who have attended F-HC (give maiden name, too, of the married women).
_____
_____
_____

33. Fill in your Social Security number (if any)
( ) – ( ) – ( )

If you are an American citizen and do not have a Social Security number apply for one at your local or district office and report it to the Office of Admissions upon receipt.

34. Name and address of your daily newspaper _____

35. Name and address of your weekly (county) newspaper _____

36. Name and address of your high school _____
Name of principal _____ Name of guidance counselor _____

37. Minister's name and address _____

38. One other reference (Give address.) _____

39. Employers, if any
Name(s) Address(es) Work you did
_____
_____
_____

40. Have you ever been convicted of a crime (other than a minor traffic violation)? 1 Yes (Attach details.) 2 No

41. To whom should statements of your account be sent by the College Business Office?
1 Parent(s)
2 Guardian(s)
3 Yourself only
4 Other relatives _____
5 Government agency _____
6 Other _____
Billing address _____

42. Circle one:
1 I am a married student and will live in town.
2 I will commute from home or live with relatives.
3 I enclose a $10.00 non-refundable room reservation deposit.
4 I have sent my room reservation deposit.
5 Other _____

Please ask your principal to send a transcript of your grades to date. Early admission is based on grades through the first semester of the junior year; regular admission is based on grades through the entire junior year. If you have not graduated already, a final transcript should be sent after graduation. This application should be mailed at the earliest possible date; you need not wait on the availability of ACT scores and transcripts.

"I certify that the preceding statements and information are correct and complete. I know the moral and educational standards of the College as set forth in the catalog, and I pledge to abide by the College policies."

_____ _____
Date Signature of Applicant

Figure 8

REGISTRATION INFORMATION

REGISTRATION INFORMATION
Please fill out completely, both front and back.

I. D. Number _____ Name (Last name first) _____

Home Street, Route and/or P. O. Box _____ City _____ State _____ Zip Code _____

Mr. & Mrs.
Mr. _____
Mrs. Parent(s)/Guardian(s) Name _____ Address if different from above _____

(31-40) Phone where someone may be notified in case of an emergency _____ Area Code - No.
(41) Phone is number of ___1 Parents ___2 Father ___3 Mother
___4 Guardian ___5 Wife ___6 Other relative ___8 Other _____
(42) Father living? ___1 Yes ___2 No (43) Mother living? ___1 Yes ___2 No
(48-49) County of Residence (if Tennessee) _____
(57-67) (Men only) Selective Service No. _____ (68-70) S. S. Classification _____
(71-79) Social Security No. _____

(35-37) F-HC P. O. Box _____
(39) Marital Status
___1 Single ___2 Married - Spouse's Name _____
___3 Widowed ___4 Separated ___5 Divorced
(40) Children (Number) _____
(41) Will you be receiving veterans benefits (GI Bill)? ___1 Yes ___2 No
(42) Church Preference
___1 Church of Christ ___2-8 Other: Name _____ ___9 None
(43) Church Member? ___1 Yes ___2 No
(46-47) Housing

___10 With Parents or relatives	___26 Brigance
___21 Hall Roland	___27 Men's New-South
___22 Paul Gray	___28 Women's New
___23 Dixon Hall	___29 College Apartments
___24 Men's New-North	___30 Off Campus
___25 Thompson	Local Address _____

(49-53) Birth Date _____
(54) Is this your first registration at F-HC? ___1 Yes ___2 No; Readmission after one or more regular semesters (not summer) ___3 No; Continuing - here last regular semester.
(55) Name other colleges you have attended with dates. _____

(56) Education sought at F-HC

___1 One term or year only	___3 Associate in Arts Degree
___2 Two years (no degree)	___4 Third Year Certificate

(57) Do you expect this to be your last registration at F-HC? ___1 Yes ___2 No

(Over)

Figure 8 (continued)

(58) Do you expect to receive a diploma at the end of this school year?

___0 No
___1 Associate in Arts in May
___2 Associate in Arts in August
___3 Third Year Certificate in May
___4 Third Year Certificate in August
___5 Complete requirements in December

(59) Class

___1 Early Admission Freshman
___2 Regular Freshman
___3 Sophomore (28 hrs. credit earned)
___4 Third Year
___5 Special

(60-62) Major

___011 Bible
___062 Business Administration
___072 Acctg. & Data Processing
___082 Business - Gen. Office
___092 Secretarial
___103 Business Education*
___163 Elementary Education*
___205 Home Economics
___203 Home Economics Education*
___215 Food Service Management
___253 Health & Physical Educ.*
___265 Recreation
___304 Gen. Lib. Arts (and undecided)
___303 Education - General, Secondary, Fields not otherwise listed*
___324 Art
___323 Art Education*
___344 English
___343 English Education*
___364 Mathematics
___363 Mathematics Education*
___384 Modern Languages (French, German, and/or Spanish)
___383 Modern Languages Educ.*
___404 Music
___403 Music Education
___424 Nat. Sc. (Biol., Chem., and/or Phy)
___423 Science Education*
___444 Psychology
___443 Psycho. (Guidance & Counseling)*
___484 Soc. Sc. (History and/or Gov't)
___483 Social Sciences-Education*
___544 Speech (Gen., Pub.Speak., Theater)
___543 Speech Educ. (including Correction)*
___555 Broadcasting
___605 Agriculture
___615 Engineering
___625 Dentistry
___635 Medical Technology
___645 Medicine
___655 Nursing
___665 Optometry
___675 Pharmacy
___685 Veterinary Medicine
___695 Other Health Arts
___705 Law
___715 Journalism
___725 Social Work
___735 Law Enforcement

* If you plan to teach in Elementary or Secondary school, please check "Education" rather than just subject matter field.

(63) Social Club

___1 A. T. L.
___2 Eupathian
___3 P. K. A.
___4 Philomathean
___5 Sigma Rho

(64-67) Local Telephone (Dorm Room or Home)_____

(79) Semester Hours This Registration

___1 Under 12 ___2 12 or over

Figure 9

TRIAL SCHEDULE

(Please fill out a tentative schedule and take it to your faculty advisor.)

NAME_____ Classification_____

Dept. and Course No.	Title of Course	Instructor	Period	Days	Room	Hrs. Credit

The Schedule by Hours and Days will help in preventing conflicts.

	MONDAY	TUESDAY	WEDNESDAY	THURSDAY	FRIDAY
7:00					
8:00					
9:00					
11:00					
12:00					
1:00					
2:00					
3:00					
4:00					

Figure 10

CHANGE OF SCHEDULE

ID NUMBER _____ NAME _____ DATE _____

Dept.	Course No.	Title of Course	Sec. No.	Instructor's Signature	Period	Days	Hrs. Cr.
Courses or Sections DROPPED:							
				Total Hours Dropped			
Courses or Sections ADDED:							
				Total Hours Added			

INSTRUCTIONS:

Obtain signatures of your faculty advisor and all instructors involved. Class change does not become official until this request is presented for approval to the Registrar's Office and you have completed a new final schedule form

REASON FOR CHANGE:

Convenience of Student? _____ College? ____

Total Hours Before Change _____

Total Hours After Change _____

Do Not Write In This Block:	
No Charge	
Change Fee	
Add Hrs	
Deduct Hrs ____	
Fees	

_____ Advisor's Signature

_____ Registrar's Office Signature

ID NO. NAME (LAST NAME FIRST) PART TIME STUDENT ☐ FULL TIME STUDENT ☐ MAJOR:

FREED-HARDEMAN COLLEGE HENDERSON TENNESSEE

SEMESTER: FALL ☐ SPRING ☐ SUMMER ☐ FIRST TERM ☐ SECOND TERM ☐ CLASS

DEPT.	COURSE NO.	TITLE OF COURSE	SEC. NO.	INSTRUCTOR	PERIOD	DAYS M	T	W	T	F	ROOM	HRS. CR.

FACULTY ADVISOR'S NAME APPROVED DATE TOTAL HRS.

FINAL SCHEDULE

Figure 11

FREED-HARDEMAN COLLEGE APPLICATION CODING FORM

CARD 1.
Student ID No. 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Veteran	32	Last College	55
Application Rec'd.	33 34 35 36 37	FHC Plans	56
Sex	38	Entry Sought	57 58
Marital Status	39	Class	59
Children	40	Original Major	60 61
Age	41	ACT Composite	62 63
Church Preference	42	Prel. Transcript	64
Member	43	Final Transcript	65
Citizen	44	Resident State	68 69
Race	45	County (if Tenn.)	70 71
House Plans	46	References	72
Fin. Need	47	Room Reservation	74
Health	48	Action	75
H.S. Grad. Yr.	49 50	Admitted for	76 77
ACT Date	51 52 53	Med. Exam	79
New Student	54	Card Code	1/80

Home Street Address 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29

Area Code 31 32 33	Telephone No. 34 35 36 37 38 39 40		
Phone ID	41	Alumni Fam.	54
F. Liv.	42	Father's Oc.	55 56
M. Liv.	43	Sel. Serv. No.	57 58 59 60 61 62 63 64 65 66
Birth State	44 45	Soc. Sec. No.	71 72 73 74 75 76 77 78 79
Father's Ed.	50 51	Card Code	2/80
Mother's Ed.	52 53		

---

ity, State

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26

ip Code

27 28 29 30 31

upport

35

rime

42

Birth Date _ _
49 50 51 52 53

43 44 45 46 47 48

Card Code 3
80

---

ewspaper

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

ddress: City and State

l 52 53 54 55 56 57 58 59 60 61 62 63 64 65 67 68 69 70 71 72 73 74 75 76 77 78 79

ard Code 4
80

---

igh School

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

ddress: City and State

l 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

ard Code 5
80

---

hurch

7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

ddress: City and State

l 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79

ard Code 6
80

ard – 1

udent ID No. (1-6)
lling and Grade Mailing Name (Parent, Guardian or Student)

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

---

ard – 2

udent ID No. (1-6)
lling and Grade Mailing Street Address

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

---

ard – 3

udent ID No. (1-6)
lling and Grade Mailing City, State and Zip Code

8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25

Figure 11 (continued)

FREED-HARDEMAN COLLEGE
PORTA-PUNCH CODING FORM

Student ID No.
1 2 3 4 5 6

Name
7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31

Room Res. Rec'd.
40 41 42 43 44

Dorm Preference
(1=yes)
49

Room-mate Preference
(1=yes)
51

Type Admission
53
(0=Early Admission. 1=First time any college, 2=Transfer)

Low Score/Grade
54
(1=yes. 14 or below on ACT and/or below 2.00 on High School grades)

Date of Entry
56 57 58

FLOW CHARTS

The importance of documentation is often stressed in writings which relate to the development of information systems. Documentation that is readily understood and accurate in its description is a valuable tool – during the development of the system and afterwards as a historical reference. Documentation is utilized in several forms as a written description of a record or process or organizational activity, a linear diagram of time and resource allocation, or a graphically depicted model of the system which is known as a *flow chart*.

An important dimension in the development of the information system is included in a flow chart which describes the physical flow of work and the action taken during the process of work moving through that flow. At a more finite level, flow charts are used to describe the flow of activities in the processing of a specific data application. The flow charts developed for this purpose become tools for the data processing programmer to use in writing programs to produce the desired output. Each step in the process is identified in the flow chart, and each flow chart provides specifications for the programmer to develop instructions for processing the data for that particular purpose.

The flow charts included in this section were developed to computerize many of the applications that held the promise of improved efficiency for the information system. The applications were processed on the IBM 1130 computer using card input, disk storage, and printed output. Each flow chart represents a specific application. Card-decks containing the processing programs can be obtained from Freed-Hardeman College officials for institutions desiring to replicate the system.

Figure 12
LOAD MASTER CARDS TO DISK (FHC41)

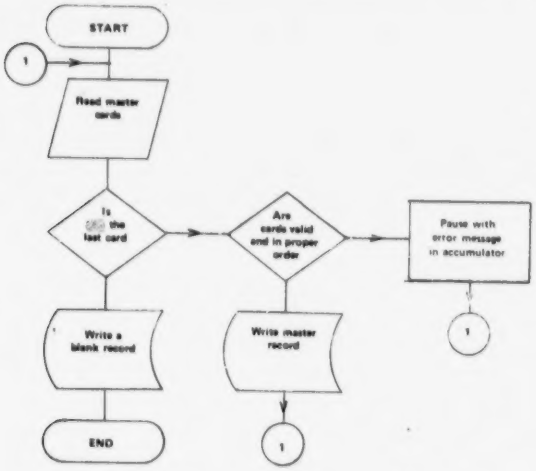


Figure 13
STUDENT DIRECTORY (FHC12)

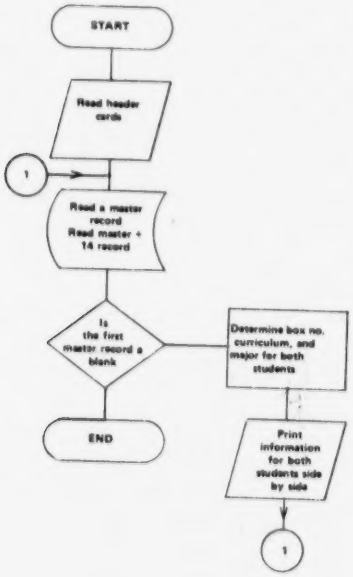

START
Read header cards
1
Read a master record
Read master + 14 record
Is the first master record a blank
Determine box no. curriculum, and major for both students
END
Print information for both students side by side
1

Figure 14
LIST OF STUDENTS BY COUNTY (FHC26)

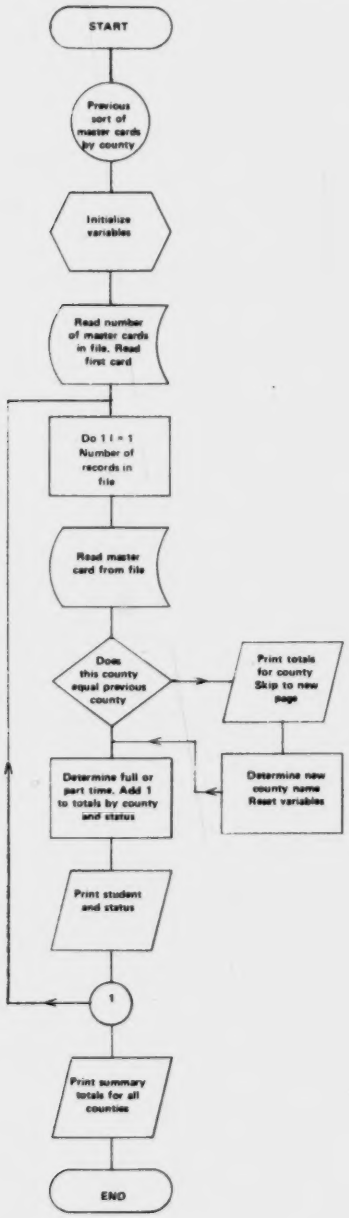

START
Previous sort of master cards by county
Initialize variables
Read number of master cards in file. Read first card
Do 1 I = 1 Number of records in file
Read master card from file
Does this county equal previous county
Print totals for county Skip to new page
Determine new county name Reset variables
Determine full or part time. Add 1 to totals by county and status
Print student and status
1
Print summary totals for all counties
END

Figure 15
ENROLLMENT BY STATE (FHC29)

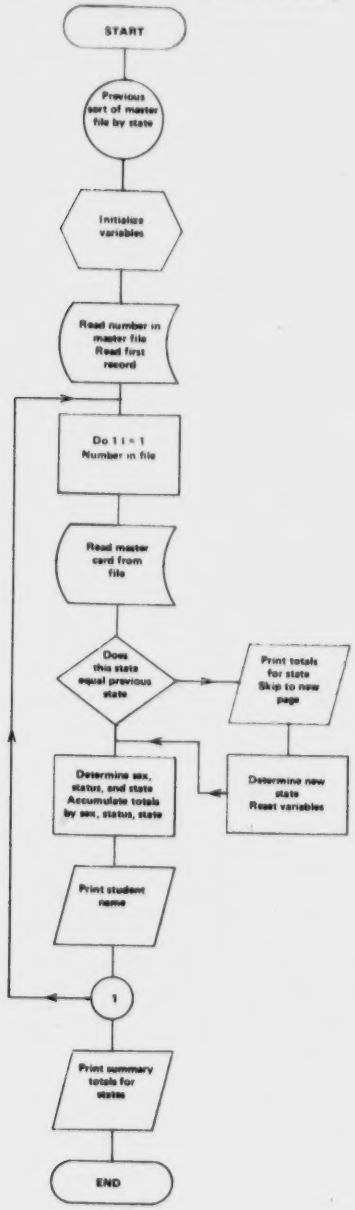

START
Previous sort of master file by state
Initialize variables
Read number in master file Read first record
Do 1 I = 1 Number in file
Read master card from file
Does this state equal previous state
Print totals for state Skip to new page
Determine new state Reset variables
Determine sex, status, and state Accumulate totals by sex, status, state
Print student name
1
Print summary totals for states
END

Figure 10
TOTAL FRESHMAN ENROLLMENT
BY STATE, SEX, AND FULL OR PART TIME (FHC73)

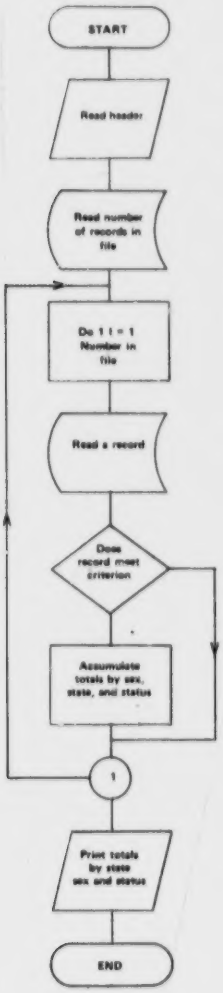


Figure 17
LIST OF STUDENTS ALPHABETICALLY BY LOCAL RESIDENCE CARDS (FHC11)

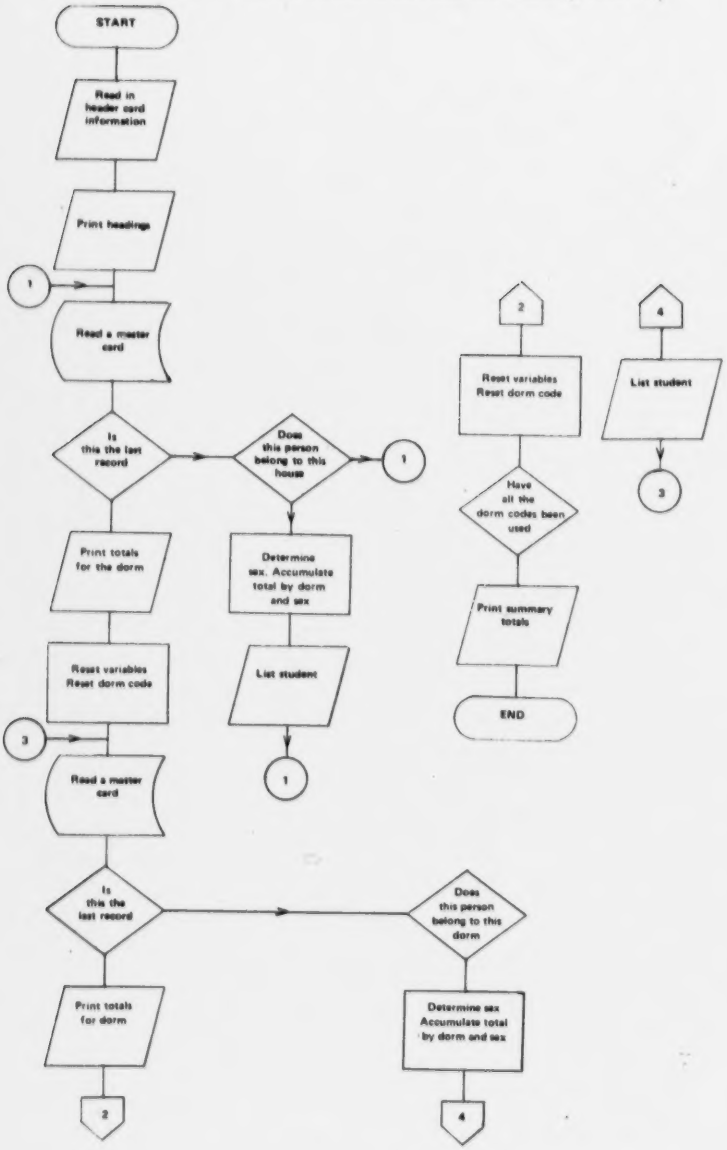


Figure 18
LIST OF STUDENTS BY SEX, RACE, AND NATIONALITY (FHC22)

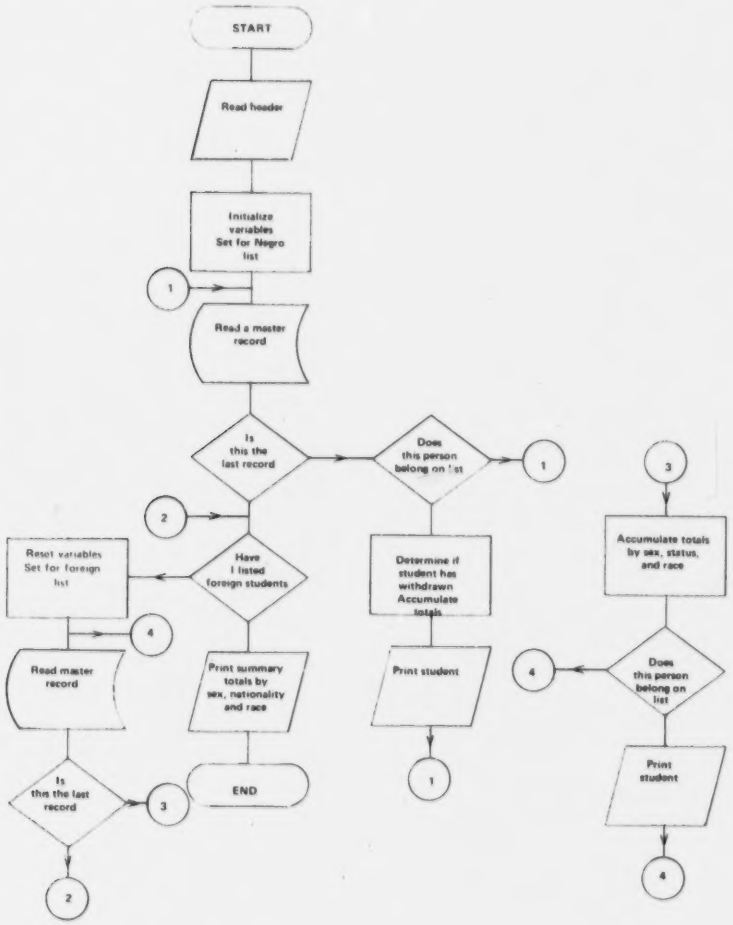


Figure 19
LIST BY MARITAL STATUS (FHC23)

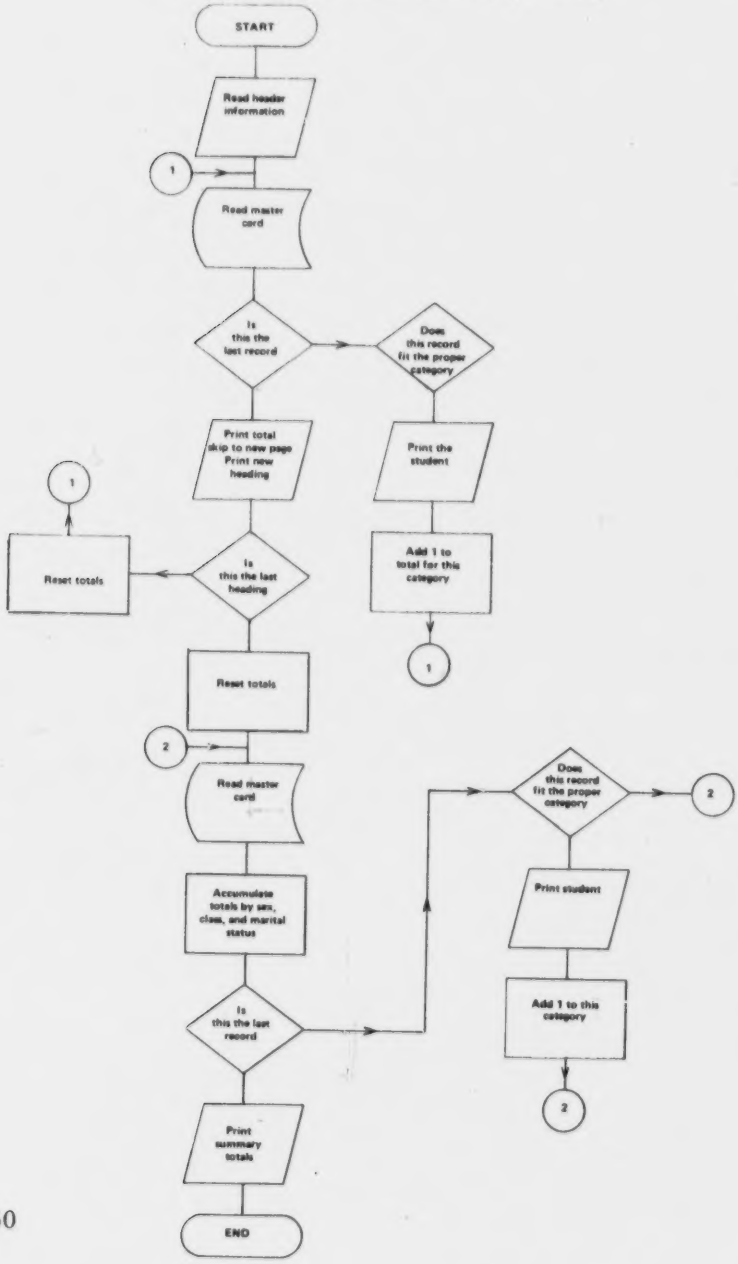


Figure 20
LIST BY RELIGION (FHC20)

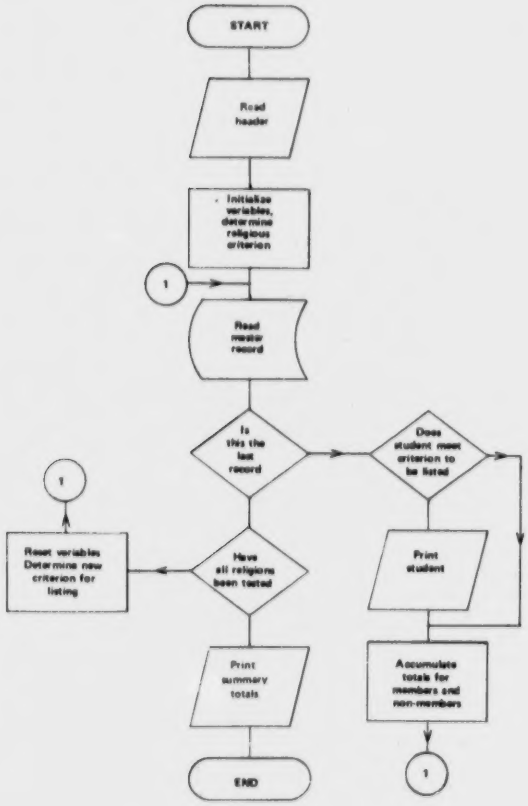


Figure 21
STATISTICS OF NEW TRANSFER STUDENTS BY STATE (FHC71)

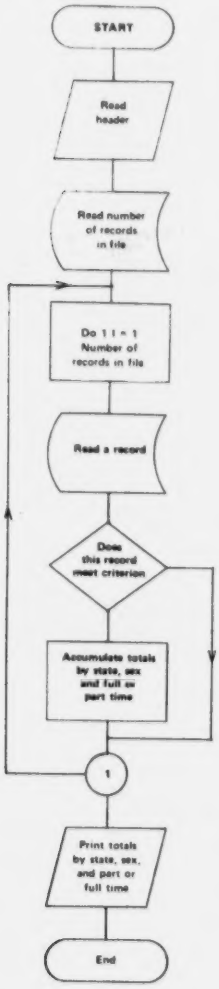

START
Read header
Read number of records in file
Do 1 I = 1 Number of records in file
Read a record
Does this record meet criterion
Accumulate totals by state, sex and full or part time
1
Print totals by state, sex, and part or full time
End

Figure 22
STATISTICS BY STATE
OF FIRST TIME ANY COLLEGE (FHC72)

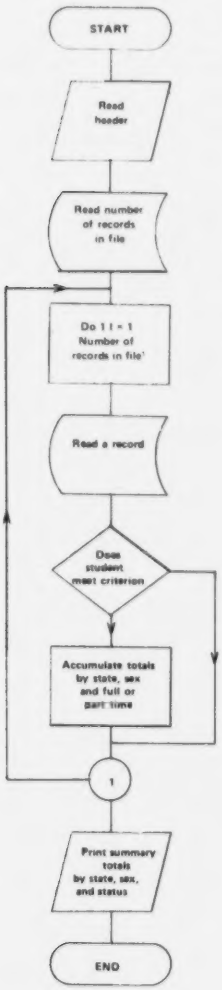

START
Read header
Read number of records in file
Do 1 I = 1 Number of records in file
Read a record
Does student meet criterion
Accumulate totals by state, sex and full or part time
1
Print summary totals by state, sex, and status
END

Figure 23
PROGRAM TO LOAD
TEACHER FILE TO DISK (FHC02)

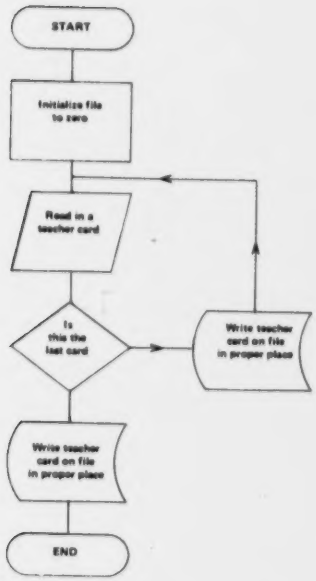

START
Initialize file to zero
Read in a teacher card
Is this the last card
Write teacher card on file in proper place
Write teacher card on file in proper place
END

Figure 24
STUDENT SCHEDULE (FHC03)

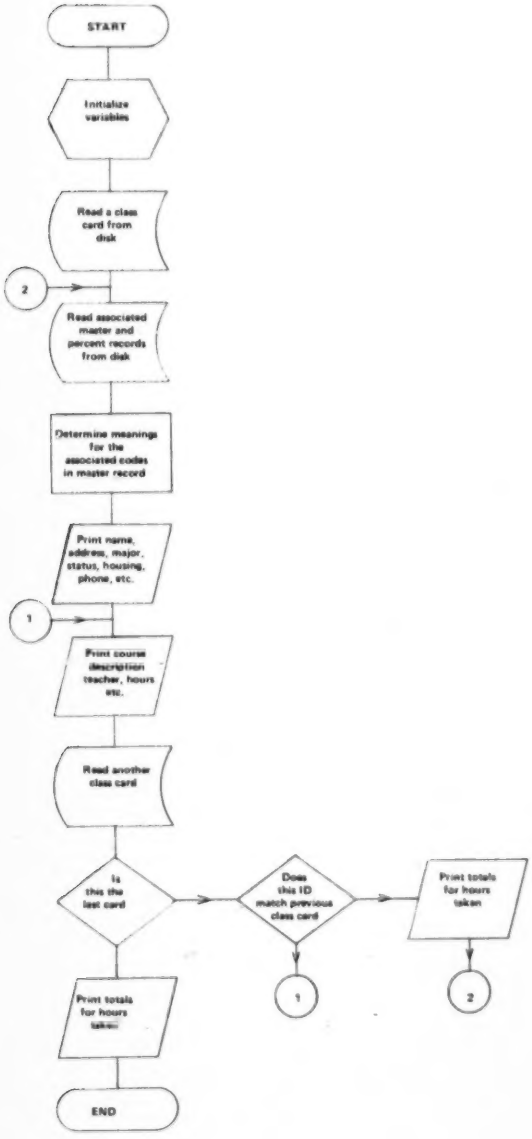

START
Initialize variables
Read a class card from disk
2
Read associated master and percent records from disk
Determine meanings for the associated codes in master record
Print name, address, major, status, housing, phone, etc.
1
Print course description teacher, hours etc.
Read another class card
Is this the last card
Does this ID match previous class card
Print totals for hours taken
1
2
Print totals for hours taken
END

Figure 25
STATISTICAL LIST
OF MAJOR FIELD BY CLASS (FHC54)

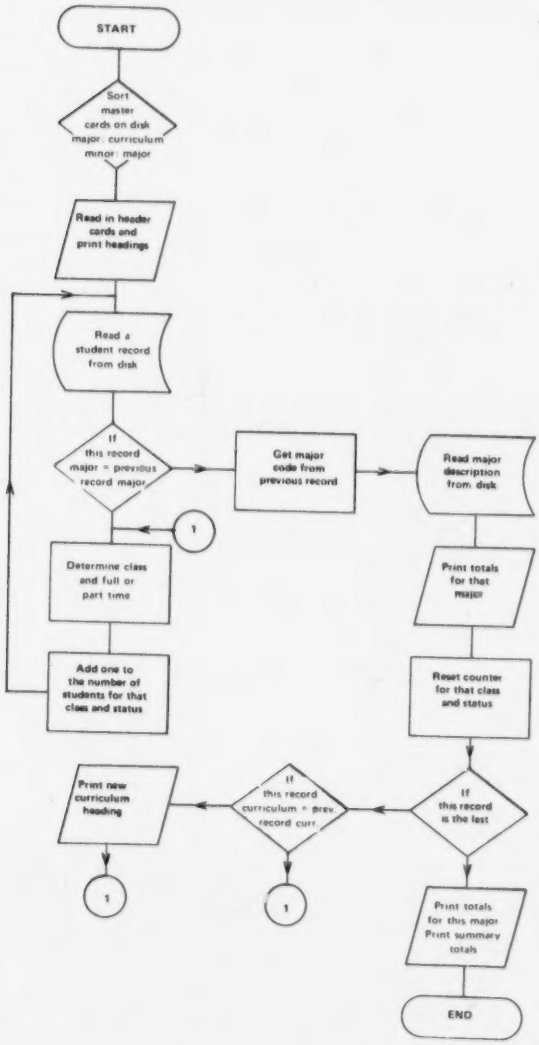

START
Sort master cards on disk major curriculum minor major
Read in header cards and print headings
Read a student record from disk
If this record major = previous record major
Get major code from previous record
Read major description from disk
1
Determine class and full or part time
Print totals for that major
Add one to the number of students for that class and status
Reset counter for that class and status
Print new curriculum heading
If this record curriculum = prev. record curr.
If this record is the last
1
1
Print totals for this major Print summary totals
END

Figure 26
STATISTICAL LIST GIVING HOURS BY RESIDENTAL STATUS AND CLASS (FHC40)

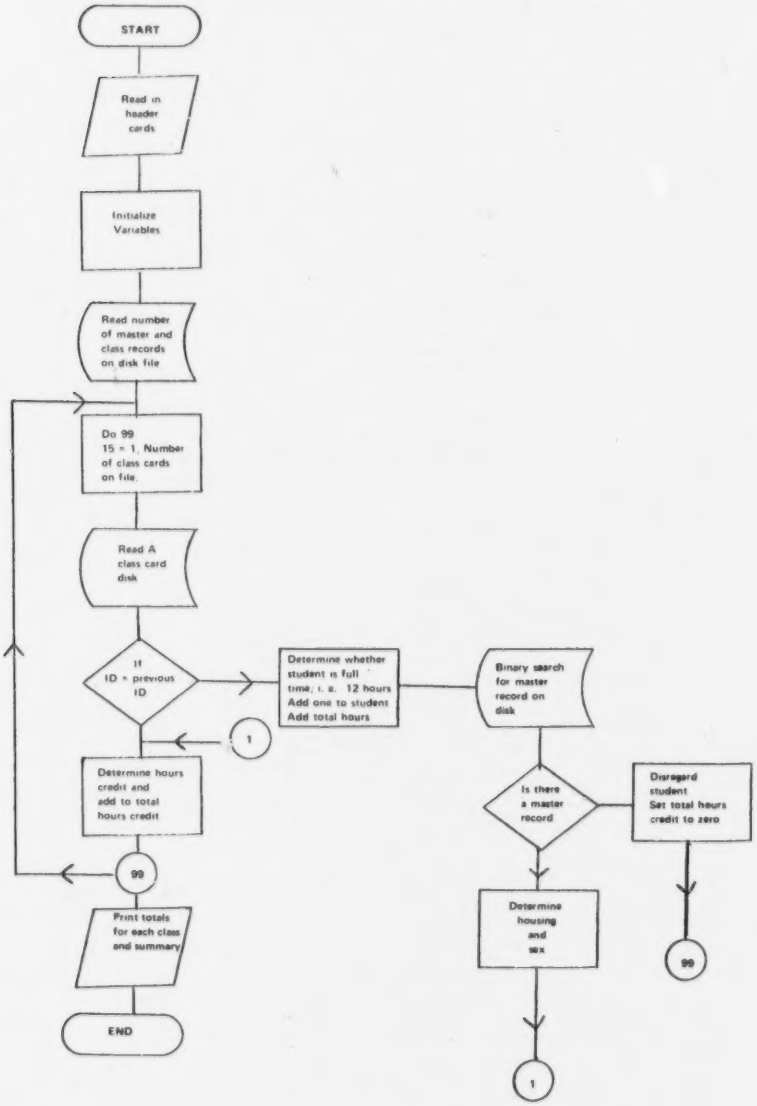

START
Read in header cards
Initialize Variables
Read number of master and class records on disk file
Do 99 I5 = 1, Number of class cards on file.
Read A class card disk
If ID = previous ID
Determine whether student is full time; i. e. 12 hours Add one to student Add total hours
Binary search for master record on disk
1
Determine hours credit and add to total hours credit
Is there a master record
Disregard student Set total hours credit to zero
99
Determine housing and sex
99
Print totals for each class and summary
END
1

Figure 27
PROGRAM TO PRINT GRADES (FHC60)

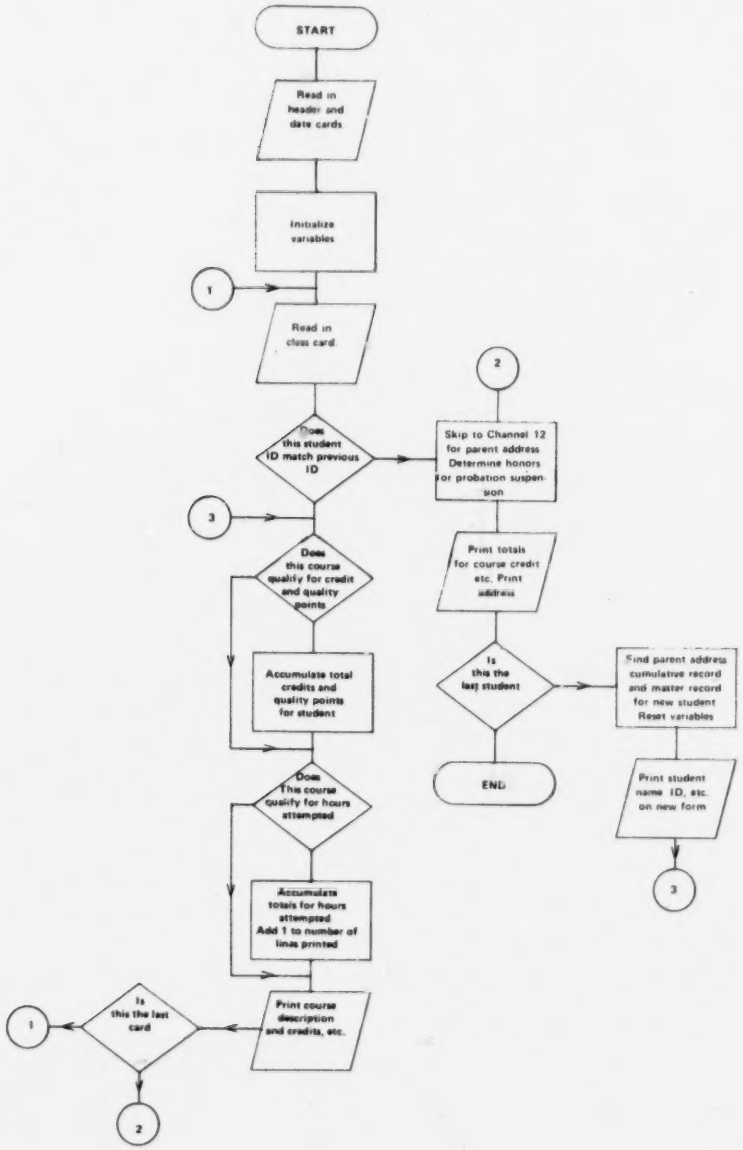

START
Read in header and date cards
Initialize variables
1
Read in class card
Does this student ID match previous ID
2
Skip to Channel 12 for parent address Determine honors for probation suspension
3
Print totals for course credit etc. Print address
Does this course qualify for credit and quality points
Is this the last student
Find parent address cumulative record and master record for new student Reset variables
Accumulate total credits and quality points for student
END
Print student name ID, etc. on new form
3
Does This course qualify for hours attempted
Accumulate totals for hours attempted Add 1 to number of lines printed
Print course description and credits, etc.
Is this the last card
1
2

Figure 28
SUMMARY OF GRADES BY DEPARTMENT (FHC64)

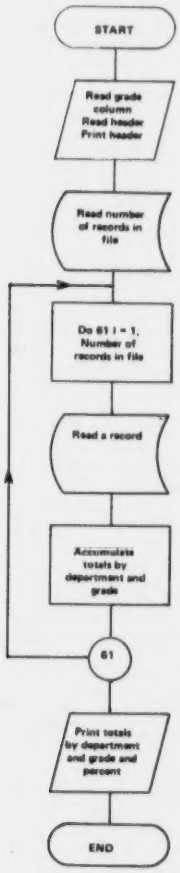


Figure 29
SUMMARY OF GRADES BY TEACHER (FHC74)

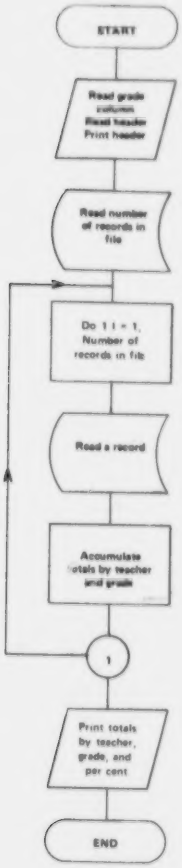


Figure 30
SUMMARY OF GRADES BY CLASS (FHC75)

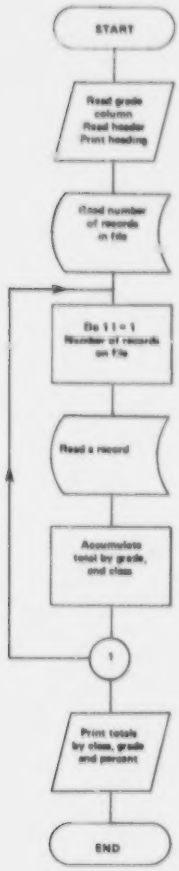


Figure 31
SUMMARY OF GRADES BY SEX (FHC66)

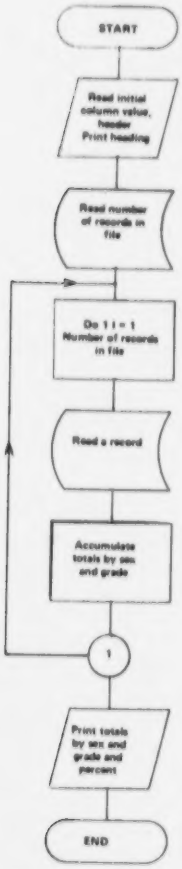

START
Read initial column value, header Print heading
Read number of records in file
Do 1 i = 1 Number of records in file
Read a record
Accumulate totals by sex and grade
1
Print totals by sex and grade and percent
END

Figure 32
LIST OF STUDENTS WITH GRADE OF FIEWXU (FHC65)

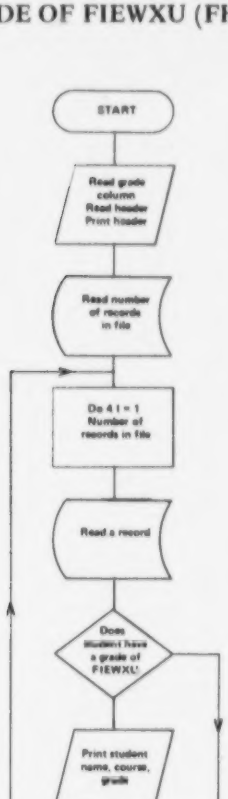
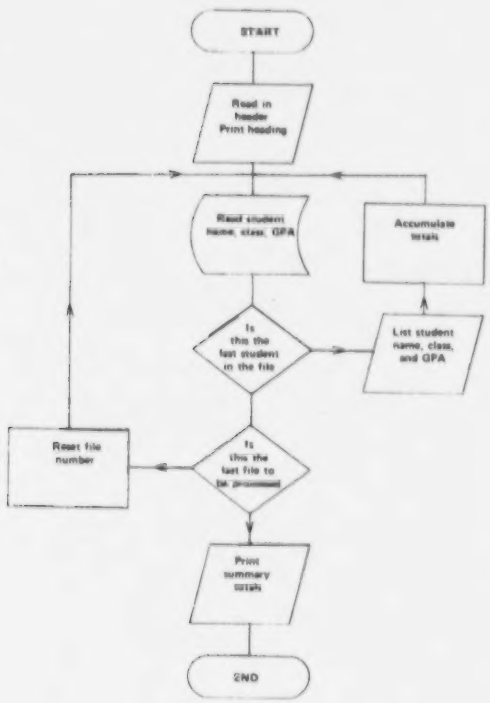


Figure 33
LIST OF THOSE ON HONOR AND PROBATION ROLLS (FHC62)


START
Read in header Print heading
Read student name, class, GPA
Accumulate totals
Is this the last student in the file
List student name, class, and GPA
Reset file number
Is this the last file to be processed
Print summary totals
END

DATA OUTPUT

The output of any information system is the product of the efforts of data collection, accumulation, storage, processing, and reporting. Outputs are usually produced in response to requests from the information system users and managers. To fulfill the needs for information expressed through these requests, the information system outputs should be in their most utilitarian form.

The reports generated through the small college information system reported herein were specifically formatted to serve the purposes of Freed-Hardeman College administrators. Many of these reports are relatively simplified accumulations of quantified data; i.e., summary reports and tabulations. Selected examples of reports and other output documents are included in this section. They are descriptive of typical applications of student data in the Freed-Hardeman information system. The data-base consists of the inputs identified in this section. Output documents were developed during the second year of the project on the basis of this data-base and have been subjected to revision since that time as a result of their use.

Output documents generally serve one or more of the following functions:

(a) Reporting statistical tabulations and summaries of academic performance of students.
(b) Reporting descriptive characteristics of college students and faculty personnel.
(c) Generating enrollment projections and attendant faculty resources required for administrative planning.
(d) Identification of factors affecting faculty retention, academic student load, salary schedules, and expectancy-success tables.
(e) Administrative reports requested or required by accreditation and/or funding agencies.
(f) Financial accounting reports for fiscal management of the institution.
(g) Operational reports for administration of the institutional program; e.g., grade reports, student and faculty schedules, inventories, space allocation, budgeting planning and resource allocation.
(h) Alumni reporting and communication.

FREED-HARDEMAN COLLEGE

STATISTICAL REPORT – PART I-A
(ENROLLMENT BY SEX AND CLASS)

Classification: Early Adm., Freshman, Sophomore, Third Year, Special

	MALE				TOTAL				FEMALE			
	Full Time		Part Time		Full Time		Part Time		Full Time		Part Time	
	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.	No.	Hrs.
Early Adm.												
Freshman												
Sophomore												
Third Year												
Special												
TOTAL												

TOTAL NO. MALE

TOTAL HRS. MALE

TOTAL NO. FEMALE

TOTAL HRS. FEMALE

TOTAL NO. STUDENTS

TOTAL HRS.

TOTAL FULL TIME STUDENTS
TOTAL FULL TIME HRS.

TOTAL PART TIME STUDENTS
TOTAL PART TIME HRS.

TOTAL STUDENTS

TOTAL ALL HRS.

ALSO LIST STUDENTS BY CLASS WITH HOME ADDRESSES

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part I-A ENROLLMENT BY SEX AND CLASS	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	5	Registrar Director of Research Bursar Director of Public Relations Dean
List of Students and Home Addresses by class.	" "	List all registrants at close of add and drop period; note withdrawals as of end of add and drop period but include in list.	3	Dean Dean of Students Class Officers (Can be distributed by Dean of Students)

STATISTICAL REPORT - PART I-C

ENROLLMENT BY RESIDENCE CODE

10	With Parents or Relatives
21	Hall Roland
22	Paul Gray
23	Dixon Hall
24	Men's New
25	Thompson
26	Brigance
27	White Street
30	Off Campus

TOTAL 10 WITH PARENTS OR RELATIVES _____

TOTAL 20s DORMITORY _____

TOTAL 30 OFF CAMPUS _____

ALSO LIST BY RESIDENCE CODE

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part I-C ENROLLMENT BY RESIDENCE CODE	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of students in all categories from student Master Cards three days after registration closes; complete report as of close of drop and add period, within five days after close of period	4	Registrar Director of Research Bursar Dean of Students
List of Students by Residence code	"	Preliminary list immediately after registration closes; final list with corrections supplied from dormitory supervisors through Dean of Students within five days after close of drop and add period	3	Dean of Students (2 copies) Bursar

STATISTICAL REPORT - PART I-D

ENROLLMENT BY CHURCH PREFERENCE AND MEMBERSHIP

	PREFERENCE	MEMBER YES (1)	MEMBER NO (2)
1	CHURCH OF CHRIST		
2	BAPTIST		
3	CATHOLIC		
4	CHRISTIAN		
5	METHODIST		
6	PENTECOST		
7	PRESBYTERIAN		
8	OTHER (LIST)		
9	NONE		

ALSO LIST STUDENTS IN GROUPS 2-9 ALPHABETICALLY AND INDICATE PREFERENCE AND MEMBERSHIP OR NON-MEMBERSHIP BY CODES.
LIST STUDENTS IN GROUP 1 WHO ARE NOT MEMBERS.

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part I-D ENROLLMENT BY CHURCH PREFERENCE AND MEMBERSHIP	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	4	Registrar Director of Research Dean Dean of Students
List of Students Not Members of Church of Christ	"	Preliminary list within three days after close of registration; final list on all registrants with withdrawals noted within five days after close of drop and add period	3	Dean Dean of Students Director of Research

STATISTICAL REPORT - PART I-E

REPORT ON STUDENTS EXPECTING TO FINISH

EXPECTING A. A.
IN MAY-JUNE

EXPECTING A. A.
IN AUGUST

EXPECTING THIRD YR.
CERT. IN MAY-JUNE

EXPECTING THIRD YR.
CERT. IN AUGUST

OTHERS
EXPECTING THIS TO
BE LAST TERM

ALSO LIST EACH GROUP WITH ADVISER CODE

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part I-E List of Students Expecting to Finish	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of students in all categories from student Master Cards day after registration closes; complete report as of close of drop and add period within five days after clsoe of period.	5	Registrar Director of Research Bursar Dean (2 copies)

STATISTICAL REPORT - PART II-A

STUDENT LOAD BY SEX AND CLASS

HOURS	E. ADM.			FRESHMAN			SOPHOMORE			THIRD YEAR			SPECIAL			TOTAL		
	M	F	CT	M	F	CT	M	F	CT	M	F	CT	M	F	CT	M	F	CT
1																		
2																		
3																		
4																		
5																		
6																		
7																		
8																		
9																		
10																		
11																		
12																		
13																		
14																		
15																		
16																		
17																		
18																		
19																		
20																		
21																		

over

TOTAL NUMBER
TOTAL HOURS

M=Male, F=Female,, CT=Cumulative Total

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part II-A STUDENT LOAD BY SEX AND CLASS	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report as of close of drop and add period within five days after close of period.	5	Registrar Director of Research Dean Dean of Students Bursar

STATISTICAL REPORT - PART III-A

FIRST TIME ANY COLLEGE

CATEGORY: REGULAR UNDERGRADUATE, SPECIAL

CUMULATIVE HOURS: 0

PREVIOUS COLLEGE: NONE

DATE OF ENTRY: (SPECIFIED EACH TERM)

	MALE				FEMALE				TOTAL			
	FULL TIME		PART TIME		FULL TIME		PART TIME		FULL TIME		PART TIME	
	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS
REG. U. G.												
SPEC.												

TOTAL NUMBER MALE

TOTAL HOURS MALE

TOTAL FULL TIME STUDENTS

TOTAL FULL TIME HOURS

TOTAL NUMBER FEMALE

TOTAL HOURS FEMALE

TOTAL PART TIME STUDENTS

TOTAL PART TIME HOURS

FULL TIME EQUIVALENT OF PART TIME STUDENTS[a]

TOTAL ALL STUDENTS

TOTAL ALL HOURS

[a]Total part time hours divided by 16 (fall and spring), by 12 (summer cumulative), or by 6 (summer, first or second term).

ALSO LIST FIRST TIME STUDENTS

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part III-A FIRST TIME ANY COLLEGE	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	4	Registrar Director of Research Director of Public Relations Dean
List of Students and Home Addresses	" "	List of all registrants at close of add and drop period; note withdrawals as of end of add and drop period but include in list.	4	Registrar Dean of Students Director of Research Director of Testing

STATISTICAL REPORT - PART III-B

NEW TRANSFER

	MALE		FEMALE		TOTAL	
	FULL TIME	PART TIME	FULL TIME	PART TIME	FULL TIME	PART TIME
	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER	NUMBER
FRESHMAN						
SOPHOMORE						
THIRD YEAR						
SPECIAL						
TOTAL						

TOTAL NUMBER MALE

TOTAL NUMBER FEMALE

TOTAL FULL TIME STUDENTS

TOTAL PART TIME STUDENTS

TOTAL ALL STUDENTS

ALSO LIST NEW TRANSFER STUDENTS

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part III-B NEW TRANSFER	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report as of close of drop and add period within five days after close of period.	5	Registrar Director of Research Bursar Director of Public Relations Dean
List of New Transfer Students	" "	List of all registrants at close of add and drop period; note withdrawals as of end of add and drop period but include in list.	5	Dean of Students Dean Registrar Director of Research Director of Testing

STATISTICAL REPORT - PART III-C

REPORT BY RESIDENTIAL STATUS

	MALE				FEMALE				TOTAL			
	FULL TIME		PART TIME		FULL TIME		PART TIME		FULL TIME		PART TIME	
	NO.	HRS.	NO.	HRS.	NO.	HRS.	NO.	HRS.	NO.	HRS.	NO.	HRS.
COMMUTING[a]												
MARRIED DAY[b]												
UNMARRIED DAY[c]												
BOARDING[d]												
TOTAL												

TOTAL NUMBER MALE
TOTAL HOURS MALE

TOTAL NUMBER FEMALE
TOTAL HOURS FEMALE

TOTAL FULL TIME STUDENTS
TOTAL FULL TIME HOURS

TOTAL PART TIME STUDENTS
TOTAL PART TIME HOURS

[a]Housing code 10.
[b]Housing code 30; marital status code 2.
[c]Housing code 30; marital status code 1, 3, 4, or 5.
[d]Housing codes 21-27.

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part III-C Report by Residential Status	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report as of close of drop and add period within five days after close of period.	5	Registrar Director of Research Bursar Director of Public Relations Dean

STATISTICAL REPORT - PART III-G

STUDENTS BY SEX, RACE, NATIONALITY

	MALE		FEMALE		TOTAL	
	U.S.	FOREIGN	U.S.	FOREIGN	U.S.	FOREIGN
WHITE						
NEGRO						
OTHER						

ALSO LIST "NEGRO" AND "OTHER" STUDENTS

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part III-G STUDENTS BY SEX, RACE, NATIONALITY	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	5	Dean Dean of Students Bursar Director of Research Registrar
List of Students	" "	List of all registrants at close of add and drop period; note withdrawals as of end of add and drop period but include in list.	4	Bursar Dean Dean of Students Director of Research

STATISTICAL REPORT - PART IV

REPORT OF MAJOR FIELD BY CLASSIFICATION

MAJOR	EARLY ADM.		FRESHMAN		SOPHOMORE		THIRD YEAR		SPECIAL		TOTAL		GRAND TOTAL
	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	ALL
BIBLE													
Bible													
BUSINESS													
Bus. Ad. Tran.													
Bus. Ad. Term.													
Bus. --Gen. Off.													
Bus. --Secr.													
EDUCATION													
Elem. Ed.													
Sec. Ed.													
Gen. Ed.													
Art Ed.													
Bus. Ed.													
Engl. Ed.													
H. Ec. Ed.													
Math. Ed.													
Mod. L. Ed.													
Music Ed.													
Nat. Sci. Ed.													
Soc. Sci. Ed.													
Speech Ed.													
H. & P.E.													
LIBERAL ARTS													
Gen. Lib. Arts													
Art													
Engl.													
Math.													
Mod. Lang.													
Music													
Nat. Sci.													
Psych.													

SPECIFICATIONS:

(1) Identify students first by major field. List; indicating curriculum; then classify respectively by classification and enrollment status (part time or full time). Produce additional list of all in Education curriculum, indicating major. (Send one copy of majors lists to department chairman.)
(2) List students according to format above.
(3) Count students who have no major code in the last entry entitled "No Major."

STATISTICAL REPORT - PART IV
REPORT OF MAJOR FIELD BY CLASSIFICATION (cont.)

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part IV REPORT OF MAJOR FIELD BY CLASSIFICATION	Fall; Spring; 1st term Summer; Cumulative Summer	Number of ft & pt students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	4	Director of Research Director of Public Relations Dean Registrar
List of Students and Box Numbers by class	" "	List of all registrants at close of add and drop period; note withdrawals as of end of add and drop period but include in list.	3	Dean Director of Research Department Chairmen

STATISTICAL REPORT - PART V-A

ENROLLMENT BY DEPARTMENT AND CLASSIFICATION

CLASSIFICATION	EARLY ADM.		FRESHMAN		SOPHOMORE		THIRD YEAR		SPECIAL		TOTAL		GRAND TOTAL
DEPARTMENT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	FT	PT	ALL
01 Art													
02 Bible													
03 Business Ad.													
04 Ed. & Psy.													
05 English													
06 Health & P.E.													
07 Home Ec.													
08 Mathematics													
09 Mod. Lang.													
10 Music													
11 Natural Sci.													
12 Social Sci.													
13 Speech													

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part V-A Enrollment By Department and Classification	Fall; Spring; 1st term Summer on new students only; Cumulative Summer	Complete report on all registrants within five days after close of drop and add period.	5	Bursar Dean Director of Public Relations Director of Research Registrar

STATISTICAL REPORT - PART V-B

CREDIT HOURS BY DEPARTMENT AND CLASSIFICATION

DEPARTMENT	CLASSIFICATION EARLY ADM.	FRESHMAN	SOPHOMORE	THIRD YEAR	SPECIAL	TOTAL
01 Art						
02 Bible						
03 Business Ad.						
04 Education & Psy.						
05 English						
06 Health & P. E.						
07 Home Ec.						
08 Mathematics						
09 Mod. Lang.						
10 Music						
11 Natural Sci.						
12 Social Sci.						
13 Speech						

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part V-B Credit Hours By Department and Classification	Fall; Spring; 1st term Summer; Cumulative Summer	Complete report as of close of drop and add period within five days after close of drop and add period.	5	Dean Bursar Registrar Director of Research Vice President for Fiscal Affairs

STATISTICAL REPORT - PART VI-B

REPORT OF ENROLLMENT BY CLASS HOUR AND DEPARTMENT

CLASS HOUR M-W-F	Art	Bible[a]	Business Ad.	Ed. & Psy.	English	Health & P.E.	Home Ec.	Mathematics	Mod. Lang.	Music	Natural Sci.	Social Sci.	Speech
7:00													
8:00													
9:00													
11:00													
12:00													
1:00													
2:00													
3:00													
4:00													
5:00													

[a]Treat 2 hour, 4 day Bible classes as MWF classes.

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part VI-B Report of Enrollment By Class Hour and Department	Fall; Spring 1st term Summer Cumulative Summer	Complete report as of close of drop and add period within five days after close of drop and add period.	3	Dean Registrar Director of Research

STATISTICAL REPORT - PART VII

PROFILE OF STUDENT MARITAL STATUS

	MALE					FEMALE				
	Married	Single	Divorced	Separated	Widowed	Married	Single	Divorced	Separated	Widowed
EARLY ADM.										
FRESHMAN										
SOPHOMORE										
THIRD YEAR										
SPECIAL										
TOTAL										

ALSO LIST MARRIED, DIVORCED, SEPARATED AND WIDOWED.

SUMMARY DESCRIPTION OF SERVICE

TITLE	TERM(S) REQUIRED	DELIVERY TIME	COPIES	DISTRIBUTION
Statistical Report Part VII Profile of Student Marital Status	Fall; Spring; 1st term Summer; 2nd term Summer on new students only; Cumulative Summer	Number of students in all categories from student Master Cards day after registration closes; complete report on all registrants within five days after close of drop and add period.	5	Registrar Director of Research Bursar Director of Public Relations Dean
List of Married, Divorced, Separated and Widowed Students	" "	" "	3	Dean Dean of Students Director of Research

```
*IOCS(DISK)
*ONE WORD INTEGERS
*LIST ALL
*EXTENDED PRECISION
*NAME FHC29
C       THIS PROGRAM LISTS ENROLLMENT BY STATE
        DIMENSION IDATE(25),GTO(6),    IO1(160),IO2(120),IO3(20),IO4(90),I
       1O5(80),X(51,2,2)
        DEFINE FILE 1 (800,160,U,NREC)
        DEFINE FILE 5 (64,20,U,N1REC)
        DATA IO2,IO4,N1,NER/210*16448,-1,0/,X,X1/205*0./,NREC,N1REC/2*1/
        DATA GTO/6*0./
C       FILE 1 = MASTER FILE
C       FILE 5 = STATE FILE
C       IO1 = MASTER RECORD
C       IO2 = OUTPUT PRINT ARRAY
C       IO3 = STATE RECORD
C       IO4 = EDIT MASK
C       IO5 = HEADER ARRAY
C       X = NUMBER OF STUDENTS BY STATE, SEX, AND FULL OR PART TIME
C       IDATE = DATE + DESCRIPTION
C       TST = TOTAL STATES
C       GTO = TOTAL STUDENTS BY CATAGORIES
VARIABLE ALLOCATIONS
   GTO(R )=001D-000E      X(R )=0281-0020    TST(R )=0284          X1(R )=0287          TOT(R )=028A       IDATE(I )=02A8-029C
   IO1(I )=0348-02A9    IO2(I )=03C0-0349    IO3(I )=03D4-03C1    IO4(I )=042E-03D5    IO5(I )=047E-042F  NREC(I )=047F
 N1REC(I )=0480          N1(I )=0481            K(I )=0482        KOUNT(I )=0483        MAX(I )=0484         IGO(I )=0485
   NER(I )=0486          N(I )=0487             I(I )=0488          N2(I )=0489          N3(I )=048A          L(I )=048B

STATEMENT ALLOCATIONS
 41   =050D  42   =0519  1    =0566  3    =0575  4    =05A7  5    =05B0  2    =061B  11   =063F  12   =066D  13   =0673
 14   =0677  15   =06A5  25   =06AB  30   =06C0  31   =06C6  21   =06D2  10   =06FC  19   =0749  18   =0824  17   =0833
 44   =085F  43   =0865  16   =0923  45   =0967

FEATURES SUPPORTED
 ONE WORD INTEGERS
 EXTENDED PRECISION
 IOCS

CALLED SUBPROGRAMS
 READ     DATSW    LSDMF    S1403    MOVE     P1403    FILL     GET      NCOMP    TYPER    PUT      EDIT     EADDX    ELD      ELDX
 ESTO     ESTOX    IFIX     SUBSC    PAUSE    SDFIO    SDRED    SDAI     SDI
```

```
REAL CONSTANTS
   .000000000E 00=0496      .100000000E 01=0499      .500000000E 00=049C

INTEGER CONSTANTS
     1=049F      80=04A0      25=04A1      97=04A2       5=04A3       2=04A4      68=04A5       6=04A6  12544=04A7       3=04A8
    20=04A9      40=04AA      85=04AB     120=04AC   16448=04AD   15872=04AE      45=04AF      52=04B0      69=04B1      10=04B2
   110=04B3      28=04B4    5440=04B5      32=04B6    2496=04B7      33=04B8    1984=04B9      34=04BA      35=04BB       0=04BC
    60=04BD      38=04BE      42=04BF   15616=04C0    4032=04C1      15=04C2       7=04C3      31=04C4      37=04C5      49=04C6
    79=04C7    3264=04C8    2240=04C9    1728=04CA      43=04CB       4=04CC      30=04CD      53=04CE      56=04CF      58=04D0
    57=04D1      62=04D2      64=04D3      77=04D4      72=04D5       73=04D6      54=04D7      74=04D8      70=04D9      71=04DA
    44=04DB      84=04DC      21=04DD      51=04DE      19=04DF       11=04E0     151=04E1

CORE REQUIREMENTS FOR FHC29
 COMMON       0  VARIABLES   1174  PROGRAM   1312

 END OF COMPILATION
```

ENROLLMENT BY STATE AND SEX — RPT I-B SPRING 1971

	FEMALE		MALE		TOTAL	
	PT	FT	PT	FT	PT	FT
ALABAMA	3	31	1	62	4	93
ALASKA						
ARIZONA						
ARKANSAS		8		10		18
CALIFORNIA		1		3		4
COLORADO		2				2
CONNECTICUT				2		2
DELAWARE						
DIST. OF COLUMBIA						
FLORIDA	1	4		13	1	17
GEORGIA		10	1	3	1	13
HAWAII						
IDAHO						
ILLINOIS		7		10		17

INDIANA			4		9			13		
IOWA								1		
KANSAS					2			2		
KENTUCKY			23		22			45		
LOUISIANA			4		2			6		
MAINE										
MARYLAND			1					1		
MASSACHUSETTS										
MICHIGAN			7		7			14		
MINNESOTA										
MISSISSIPPI		1								
MISSOURI		1	26		17	1		43		
MONTANA			10		11	1		21		
NEBRASKA										
NEVADA										
NEW HAMPSHIRE										
NEW JERSEY										
NEW MEXICO										
NEW YORK			1		2			3		
NORTH CAROLINA			2		6			8		
NORTH DAKOTA										
OHIO			6		5			11		
OKLAHOMA					1			1		
OREGON										
PENNSYLVANIA			1		3			4		
RHODE ISLAND										
SOUTH CAROLINA			4		2			6		
SOUTH DAKOTA										
TENNESSEE		2	152	3	132	5		284		
TEXAS			2	1	10	1		12		
UTAH			2					2		
VERMONT										
VIRGINIA			8		8			16		
WASHINGTON										
WEST VIRGINIA			1		1			2		
WISCONSIN										
WYOMING										
TOTAL		8	317	6	343	14		660		
TOTAL STATE	27									

```
*IOCS(DISK)
*ONE WORD INTEGERS
*EXTENDED PRECISION
*LIST ALL
*NAME FHC26
C      THIS PROGRAM LISTS STUDENTS BY COUNTY
       DIMENSION IO1(160),IDATE(25),          IO2(120),IO3(15),X(100,2),
      1IO4(50),IO5(80)
       DIMENSION IO6(2)
       DEFINE FILE 1(800,160,U,NREC)
       DEFINE FILE 5 (100,15,U,NIREC)
       DATA X1,X,IO2,IO4/201*0.,170*16448/
       DATA IO6/2*16448/
C      FILE 1 = MASTER FILE
C      FILE 5 = TEACHER FILE
C      IO1 = MASTER RECORD
C      IO2 = OUTPUT PRINT ARRAY
C      IO3 = TEACHER RECORD
C      X = NUMBER OF STUDENTS BY COUNTY AND FULL OR PART TIME
C      IO4 = EDIT MASK
C      IO5 = HEADER ARRAY
C      IO6 = ARRAY OF BLANKS USED TO OMIT STUDENTS WITH NO COUNTY CODE
C      IDATE = DATE + DESCRIPTION
C      TCO = TOTAL COUNTIES
C      TOT = TOTAL STUDENTS IN TENN
C      TPT = TOTAL PART TIME
C      TFT = TOTAL FULL TIME
C      FILE MUST BE SORTED BY COUNTIES AND ALPHABETICALLY BY STUDENT
VARIABLE ALLOCATIONS
     X(R )=0263-000E    TCO(R )=0266         TOT(R )=0269         TPT(R )=026C         TFT(R )=026F          X1(R )=0272
   IO1(I )=0317-0278 IDATE(I )=0330-0318   IO2(I )=03A8-0331   IO3(I )=03B7-03A9   IO4(I )=03E9-03B8   IO5(I )=0439-03EA
   IO6(I )=0438-043A  NREC(I )=043C       NIREC(I )=043D         NER(I )=043E        KREC(I )=043F          N1(I )=0440
     K(I )=0441       KOUNT(I )=0442         MAX(I )=0443         IGO(I )=0444          N(I )=0445           I(I )=0446
    N2(I )=0447           L(I )=0448

STATEMENT ALLOCATIONS
 23    =04D2  22    =04DE  1     =0528  20    =0534  4     =053A  3     =0542  40    =0576  5     =057F  2     =05EA  6     =0605
 7     =0633  8     =0639  21    =0659  10    =067C  12    =074C  14    =0775  32    =0790  31    =07F1  15    =0801  16    =0808
 17    =0812  11    =0838  13    =0848

FEATURES SUPPORTED
 ONE WORD INTEGERS
 EXTENDED PRECISION
 IOCS
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CALLED SUBPROGRAMS
 READ     DATSW    LSOMF    S1403    MOVE     P1403    FILL     GET      NCOMP    TYPER    PUT      EDIT     EADDX    eLD      ELDX
 ESTO     ESTOX    IFIX     FLOAT    SUBSC    PAUSE    SDFIO    SDRED    SDAI     SDI

REAL CONSTANTS
   .000000000E 00=044C      .100000000E 01=044F      .500000000E 00=0452

INTEGER CONSTANTS
      0=0455       1=0456      80=0457      25=0458      97=0459       5=045A       2=045B      70=045C       6=045D   12544=045E
      3=045F      15=0460      40=0461      85=0462     120=0463   16448=0464   16128=0465      36=0466      43=0467      71=0468
     96=0469      20=046A    5440=046B      32=046C    2240=046D      33=046E    4032=046F      34=0470      35=0471      50=0472
  15616=0473      45=0474      49=0475      10=0476       7=0477      31=0478      37=0479      79=047A    1728=047B      60=047C
      4=047D      65=047E      21=047F      29=0480      39=0481      30=0482     100=0483   15872=0484      58=0485      26=0486
     44=0487      59=0488      76=0489     151=048A

CORE REQUIREMENTS FOR FHC26
 COMMON       0  VARIABLES   1100  PROGRAM   1186

 END OF COMPILATION
```

ENROLLMENT BY COUNTY — RPT I-B SPRING 1971

TENNESSEE

	PT	FT
DAVIDSON		15
SHELBY		29
KNOX		4
HAMILTON		11
SULLIVAN		
WASHINGTON		
MADISON		10
RUTHERFORD		2
MAURY		12
BLOUNT		1
MONTGOMERY		1
GREENE		
GIBSON		12
SUMNER		4
ROBERTSON		
WILSON		4
OBION		9
HARDEMAN		4
RHEA		
MARION		
SMITH		1
HARDIN		5
HENDERSON		14
CUMBERLAND		
UNICOI		
WHITE		
CHESTER	4	22
CROCKETT		10
POLK		
WAYNE	1	4
MACON		
DEKALB		1
HICKMAN		3
CHEATHAM		1

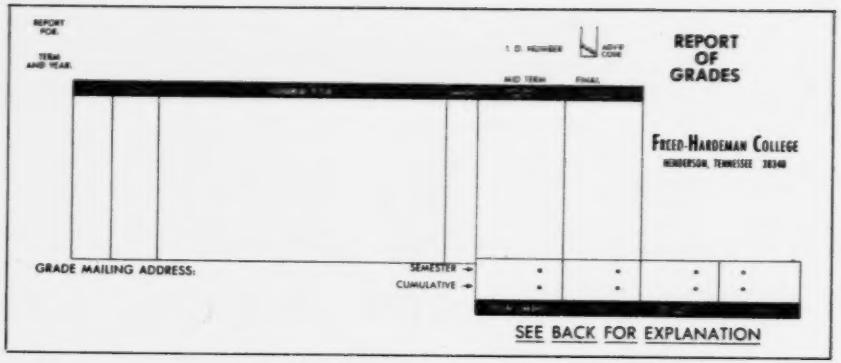
DYER	2	MORGAN	
BRADLEY		GRAINGER	
WILLIAMSON		BENTON	1
CARTER	1	FENTRESS	
WEAKLY	6	JOHNSON	
MCMINN		HUMPHREYS	
GILES	1	SCOTT	5
BEDFORD		LAKE	2
HENRY	7	OVERTON	
HAMBLEN	1	UNION	5
LINCOLN		STEWART	
ANDERSON	5	CANNON	
TIPTON	1	JACKSON	1
CAMPBELL		GRUNDY	
MARSHALL		DECATUR	1
ROANE	3	TROUSDALE	1
PUTNAM	10	LEWIS	
CARROLL	6	PERRY	11
LAWRENCE	4	HANCOCK	7
FRANKLIN	4	BLEDSOE	
SEVIER		MEIGS	
DICKSON		HOUSTON	
LOUDON		MOORE	
COFFEE	1	CLAY	
LAUDERDALE	2	SEQUATCHIE	
HAWKINS		PICKETT	1
JEFFERSON		VAN BUREN	
WARREN	5		
COCKE			
HAYWOOD	4		
FAYETTE			
CLAIBORNE			
MCNAIRY	8		
MONROE			
TOTAL	5	285	

TOTAL TENNESSEE 290

TOTAL NUMBER OF COUNTIES 51

```
*IOCS(DISK)
*ONE WORD INTEGERS
*EXTENDED PRECISION
*LIST ALL
*NAME FHC60
C      THIS PROGRAM PRINTS GRADES
C      FILE 3 = ADDRESS FILE
C      FILE 4 = CUMULATIVE POINT FILE
C      FILE 5 = MASTER CARD FILE
C      FILE 6 = ERROR FILE FOR THOSE WITH NO ADDRESS
       DEFINE FILE 3 (800,40,U,JREC)
       DEFINE FILE 4 (800,16,U,KREC)
       DEFINE FILE 5 (800,160,U,N1REC)
       DEFINE FILE 6 (500,15,U,N2REC)
       DIMENSION                        I01(40),I02(80),I03(80),I04(80),I05
     1(80),I06(6),I07(15),,I08(50),I09(80),I010(80)
       DIMENSION I011(40)
       DATA TCR,TQP,IG01,IG02,THA,IG03/0.,0.,1,1,0.,1/,I,NREC,IREC,JREC,K
     1REC/2,4*1/
       DATA I02/80*16448/
C      I01 = SCRATCH WORK ARRAY
C      I02 = OUTPUT PRINT ARRAY
C      I03 = INPUT CLASS CARD
C      I04 = PREVIOUS CLASS CARD
C      I05 = UNPACKED ADDRESS RECORD
C      I06 = I D NUMBER FOR PREVIOUS QUALITY POINT
C      I07 = CONTAINS NAME OF STUDENT WITH NO ADDRESS
C      I08 = HEADER ARRAY
C      I09 = CONTAINS FIRST HALF OF MASTER RECORD
C      I010 = DATE
C      I011 = PACKED ADDRESS FILE
C      THA = TOTAL HOURS ATTEMPTED
C      TCR = TOTAL CREDIT HOURS
C      TQP = TOTAL QUALITY POINTS
C      GPA = GRADE POINT AVERAGE
C      CCR = CUMULATIVE CREDIT HOURS
C      CQP = CUMULATIVE QUALITY POINTS
C      CHA = CUMULATIVE HOURS ATTEMPTED
C      CGPA = CUMULATIVE GRADE POINT AVERAGE
       I=1
       NREC=1
       IREC=1
```

```
STATEMENT ALLOCATIONS
 204   =0358  203   =0368  3     =0372  107   =0370  108   =0391  208   =039C  207   =03A6  27    =0381  26    =038C  126   =03C7
 2     =03D1  4     =03E9  7     =03EF  6     =03F8  11    =0401  13    =040B  12    =0413  8     =0417  5     =0428  19    =0433
 14    =044A  17    =0450  20    =045C  16    =0462  21    =0468  22    =0472  18    =047A  15    =048A  75    =0492  70    =04A3
 73    =04A9  72    =0485  76    =0488  78    =04C5  740   =04CD  74    =04D1  71    =040E  77    =050B  94    =0517  25    =0529
 97    =0530  62    =0538  63    =0546  88    =0551  121   =055C  221   =0567  61    =0568  104   =0598  103   =05A3  91    =0587
 90    =05C3  32    =05CA  23    =0503  105   =050E  106   =05F2  206   =05FD  205   =0607  28    =0612  29    =061D  129   =0628
 24    =0634  115   =063A  116   =063D  48    =0652  40    =0659  42    =065F  43    =0668  41    =0671  93    =0678  193   =0680
 45    =0687  46    =068E  47    =0697  50    =069E  1     =07EA  33    =0813  84    =0836  86    =0841  30    =0840

FEATURES SUPPORTED
 ONE WORD INTEGERS
 EXTENDED PRECISION
 IOCS

CALLED SUBPROGRAMS
 READ    MOVE    GET     UNPAC   NCOMP   PACK    FILL    P1403   S1403   PUT     EDIT    ESUB    EMPY    EDIV    ELD
 ESTO    ESBR    IFIX    FLOAT   SUBSC   SDFIO   SDRED   SDWRT   SDCOM   SDAI    SDF

REAL CONSTANTS
   .100000000E 01=02CA     .000000000E 00=02CD     .100000000E 04=02D0     .150000000E 04=02D3     .300000000E 04=02D6
   .350000000E 04=02D9     .500000000E 00=02DC     .100000000E 02=02DF

 INTEGER CONSTANTS
      1=02E2     50=02E3     80=02E4      2=02E5     45=02E6      0=02E7  15296=02E8     44=02E9     46=02EA     47=02EB
  10432=02EC  10944=02ED   6592=02EE      3=02EF     40=02F0      6=02F1    800=02F2     11=02F3  16448=02F4      4=02F5
      5=02F6     17=02F7     41=02F8      7=02F9     31=02FA     75=02FB     52=02FC     33=02FD     34=02FE     54=02FF
     60=0300     30=0301  15616=0302  15872=0303  15552=0304   7616=0305     42=0306     43=0307     39=0308     76=0309
   4032=030A      8=030B  15360=030C     28=030D     36=030E     59=030F     37=0310     12=0311     27=0312     16=0313
     55=0314     63=0315     67=0316     69=0317     70=0318     49=0319     57=031A     58=031B     65=031C     26=031D
     61=031E  12544=031F   6336=0320

 CORE REQUIREMENTS FOR FHC60
  COMMON       0  VARIABLES    714  PROGRAM    1432

  END OF COMPILATION
 R 16 FHC75 IS NOT IN LET OR FLET
 R 18        LOADING HAS BEEN TERMINATED
```


REPORT FOR
TERM AND YEAR
I. D. NUMBER
ADVT CODE
MID TERM
FINAL
REPORT OF GRADES
FREED-HARDEMAN COLLEGE
HENDERSON, TENNESSEE 38340
GRADE MAILING ADDRESS:
SEMESTER
CUMULATIVE
SEE BACK FOR EXPLANATION

```
*ONE WORD INTEGERS
*LIST ALL
*EXTENDED PRECISION
*IOCS(DISK)
C       PROGRAM FOR SUMMARY OF GRADES BY CLASS
C       INPUT IS CLASS CARDS  LAST CARD MUST BE BLANK
        DEFINE FILE 1 (5200,40,U,NREC)
C       FILE 1 = CLASS CARDS
C       I01 = CLASS CARD RECORD
C       I02 = OUTPUT PRINT ARRAY
C       I03 = HEADER ARRAY
C       I04 = PACKED CLASS CARD RECORD
C       I04 =
C       XNUM = NUMBER BY CLASS AND GRADE CATAGORY
C       TOT = TOTAL GRADES
C       TOT1 = TOTAL PER CENT
C       PERC = PER CENT OF GRADES BY CATAGORY
C       IDATE = DATE + DESCRIPTION
        DIMENSION I01(80),I02(120),I03(120),XNUM( 5,12),I04(40)
        DIMENSION IDATE(25)
        DATA I02,N1,NER,XNUM,TOT,TOT1/120*16448,-1,0,62*0./
C       M=COL FOR GRADE     MUST BE FIRST DATA CARD
        NREC=2


PAGE   4

CALLED SUBPROGRAMS
 READ     GET      S1403    MOVE     PI403    FILL     UNPAC    TYPER    PUT      EDIT     EADDX    EMPY     EDIV     ELD      ELDX
 ESTO     ESTOX    IFIX     SUBSC    SDFIO    SDRED    SDAI     SDI

REAL CONSTANTS
   .100000000E 01=0256      .500000000E 00=0259      .100000000E 04=025C      .000000000E 00=025F

INTEGER CONSTANTS
      2=0262       1=0263      80=0264      81=0265     120=0266      25=0267   12544=0268      31=0269      44=026A      85=0268
  16448=026C   15616=026D      33=026E      21=026F      34=0270      29=0271      35=0272      37=0273      36=0274      45=0275
     53=0276      38=0277      61=0278      39=0279      69=027A      40=0278      77=027C      41=027D      42=027E      93=027F
     43=0280     101=0281     109=0282     114=0283     119=0284     112=0285      26=0286      10=0287    5440=0288      73=0289
     62=028A      11=0288      15=028C      12=028D    2752=028E      13=028F    1728=0290       5=0291   16064=0292   15808=0293
  15552=0294       3=0295   15296=0296       4=0297   15040=0298       7=0299   14784=029A   10944=029B      =029C    6592=029D
      8=029E    6336=029F       9=02A0   14016=02A1    7616=02A2    7104=02A3    3008=02A4    2240=02A5      6=02A6    4032=02A7
      0=02A8     107=02A9   19264=02AA

CORE REQUIREMENTS FOR
 COMMON       0  VARIABLES    598  PROGRAM   1002
```

SUMMARY OF GRADES BY CLASS SPRING 1971

	A	B	C	D	F	N	E	W	X	I	S	U	TTOTAL
E. AD. FRESH													
PER CENT													
FRESHMAN	428	652	768	172	56		13	63		12			2164
PER CENT	19.8	30.1	35.5	7.9	2.6		6	2.9		6			100.0
SOPHOMORE	463	587	476	71	15	5	2	24		10			1653
PER CENT	28.0	35.5	28.8	4.3	9	3	I	1.5		6			100.0
THIRD YEAR	83	89	22	4		7		5					210
PER CENT	39.5	42.4	10.5	1.9		3.3		2.4					100.0
SPECIAL	4		1		1	3		1		1			11
PER CENT	36.4		9.1		9.1	27.3		9.1		9.1			100.0

```
*ONE WORD INTEGERS
*EXTENDED PRECISION
*IOCS(DISK)
*LIST ALL
*NAME FHC64
C      PROGRAM FOR SUMMARY OF GRADES BY DEPARTMENT
C      INPUT IS CLASS CARDS  LAST CARD MUST BE BLANK
       DEFINE FILE 1 (5200,40,U,NREC)
       DIMENSION IO1(80),IO2(120),IO3(240),XNUM(13,12),IO4(40)
       DIMENSION IDATE(25)
       DATA IO2,N1,NER,XNUM,TOT,TOT1/120*16448,-1,0,158*0./
C      M=COL FOR GRADE    MUST BE FIRST DATA CARD
C      FILE 1 = CLASS CARD FILE
C      IO1 = CLASS CARD RECORD
C      IO2 = OUTPUT CARD ARRAY
C      IO3 = HEADER ARRAY
C      IO4 = PACKED CLASS CARD
C      XNUM = NUMBER OF GRADES BY DEPARTMENT AND CLASS
C      IDATE = DATE AND DESCRIPTION
C      TOT = TOTAL GRADES
C      PERC = PER CENT IN EACH CATAGORY
C      TOT1 = TOTAL PER CENT
       NREC=2

 IOCS

CALLED SUBPROGRAMS
 READ    GET     S1403   MOVE    P1403   FILL    UNPAC   TYPER   PUT     EDIT    EADDX   EMPY    EDIV    ELD     ELDX
 ESTO    ESTOX   IFIX    SUBSC   SDFIO   SDRED   SDAI    SDI

REAL CONSTANTS
   .100000000E 01=03EE     .500000000E 00=03F1     .100000000E 04=03F4     .000000000E 00=03F7

INTEGER CONSTANTS
      2=03FA      1=03F8     80=03FC     81=03FD    160=03FE    161=03FF    240=0400  12544=0401     25=0402     31=0403
     44=0404     85=0405    120=0406  16448=0407  15616=0408     33=0409     21=040A     34=040B     29=040C     35=040D
     37=040E     36=040F     45=0410     53=0411     38=0412     61=0413     39=0414     69=0415     40=0416     77=0417
     41=0418     42=0419     93=041A     43=0418    101=041C    109=041D    202=041E    206=041F    112=0420     32=0421
     10=0422   5440=0423     73=0424     62=0425     11=0426     15=0427     12=0428   3008=0429     13=042A   3520=042B
  16064=042C  15808=042D  15552=042E      3=042F  15296=0430      4=0431  15040=0432      7=0433  14784=0434      5=0435
  10944=0436      6=0437   6592=0438      8=0439   6336=043A      9=0438  14016=043C   7616=043D   7104=043E   2240=043F
     46=0440   4032=0441      0=0442    208=0443    215=0444  19264=0445

CORE REQUIREMENTS FOR FHC64
 COMMON       0  VARIABLES   1006  PROGRAM   1010
```

SUMMARY OF GRADES BY DEPARTMENT SPRING 1971

	A	B	C	D	F	N	E	W	X	I	S	U	TOTAL
ART	35	44	32	3			5						119
PER CENT	29.4	37.0	26.9	2.5			4.2						100.0
BIBLE	204	329	305	51	21	6	1	22		8			947
PER CENT	21.5	34.7	32.2	5.4	2.2	6	1	2.3		8			100.0
BUSINESS AD	23	44	54	17	4	3		1		2			148
PER CENT	15.5	29.7	36.5	11.5	2.7	2.0		7		1.4			100.0
EDU & PSYC	62	113	116	18	6		3	16		5			339
PER CENT	18.3	33.3	34.2	5.3	1.8		9	4.7		1.5			100.0

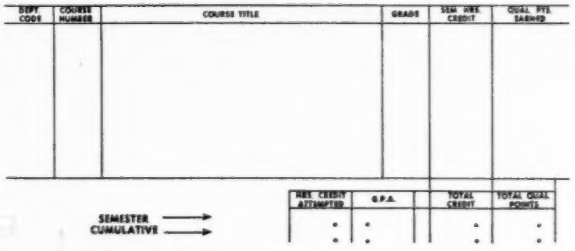
```
*IOCS(DISK)
*ONE WORD INTEGERS
*EXTENDED PRECISION
*LIST ALL
*NAME FHC62
C       PRINT HONOR AND SUSPENSION
        DEFINE FILE 1 (200,32,U,NREC)
        DEFINE FILE 2 (200,32,U,IREC)
        DEFINE FILE 3 (200,32,U,JREC)
        DEFINE FILE 4 (200,32,U,KREC)
C       FILE 1= HONOR    2=DEAN    3=PROBATION    4=SUSPENSION
        INTEGER SEX
        DIMENSION IDATE(25),STOT(4,2)
        DIMENSION IO1(120),IO3(29),IO2(120),XNUM(5,4,2),IO4(4)
        DATA NREC,IREC,JREC,KREC,N1,NER,IO2,XNUM,L,N/4*1,-1,0,120*16448,40
       1*0.,1,1/,STOT/8*0./
C       INPUT IS CREATED BY TRANSCTIPT PROGRAM
C       IO1 = CONTAINS HEADER ARRAY
C       IO2= OUTPUT PRINT ARRAY
C       XNUM = CONTAINS STATISTICS BY CLASS AND STATUS AND SEX
C       IO3 = STUDENT NAME
C       IDATE = DATE + DESCRIPTION
C       STOT = TOTAL BY SEX AND STATUS
C       NCLAS = CLASS
C       NSTA = GRADE POINT AVERAGE
C       IO4 = SCRATCH WORK ARRAY
        NUM=1
```

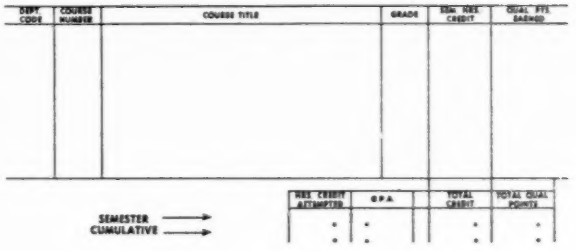
SPRING 1971

	PRESIDENT'S LIST		DEAN'S LIST		PROBATION		SUSPENSION	
	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE	FEMALE	MALE
E. AD. FRESH								
FRESHMAN	9	10	16	12	2	11	2	9
SOPHOMORE	15	17	29	21	4	3	2	
THIRD YEAR		7		10		1		
SPECIAL		27		57	2	14		
TOTAL	24	61	45	100	8	29	4	9

```
*IOCS(DISK)
*ONE WORD INTEGERS
*EXTENDED PRECISION
*LIST ALL
*NAME FHC61
C      THIS PROGRAM PRINTS TRANSCRIPTS,REBUILD CUMULATIVE RECORDS,AND BUILDS FILE
C      FOR HONORS AND PROBATION
       DEFINE FILE 1 (5200,40,U,NREC)
       DEFINE FILE 3 (800,16,U,KREC)
       DEFINE FILE 4 (200,32,U,N1REC)
       DEFINE FILE 5 (200,32,U,N2REC)
       DEFINE FILE 6 (200,32,U,N3REC)
       DEFINE FILE 7 (200,32,U,N4REC)
       DEFINE FILE 8 (800,160,U,N5REC)
C      FILE 1 MUST BE SORTED BY STUDENT
C      FILE 1 = GRADE                                FILE 3 = CUMULATIVE QP.
C      FILE 4 = PRES. LIST     FILE 5 = DEANS LIST    FILE 6 = PROBATI-N
C      FILE 7 = SUSPENSION
C      FILE 8 = MASTER RECORD
C      DATA CARD HAS TERM+DATE IN COL 60
C      IO1 = PACKED CLASS CARD
C      IO2 = OUTPUT PRINT ARRAY + PUNCH ARRAY FOR CUMULATIVE RECORD CARD
C      IO3 = UNPACKED CLASS CARD
C      IO5 = I D NUMBER ON PREVIOUS CUMULATIVE QUALITY POINT
C      IO6 = PREVIOUS CLASS CARD
C      IO7 = SCRATCH ARRAY
C      IO8 = FIRST HALF OF MASTER RECORD
C      IO9 = HEADER CARD
C      IO10 = I D AND STUDENT NAME    EQUIVALENCED WITH IO6
C      TCR = TOTAL CREDIT HOURS
C      THA = TOTAL HOURS ATTEMPTED
C      TQP = TOTAL QUALITY POINTS
C      CR = PREVIOUS CREDIT HOURS
C      QP = PREVIOUS QUALITY POINTS
C      CA = PREVIOUS HOURS ATTEMPTED
C      NSTAT = PREVIOUS STATUS E.G. PROBATION
C      NCLAS = CLASS
C      NST = GPA
C      GPA = GRADE POINT AVERAGE
C      CCR = CUMULATIVE CREDIT HOURS
C      CQP = CUMULATIVE QUALITY POINTS
C      CQP = CUMULATIVE QUALITY POINTS
C      CHA = CUMULATIVE HOURS ATTEMPTED
C      TGPA = CUMULATIVE GRADED POINT AVERAGE
```

```
C      TGPA = CUMULATIVE GRADE POINT AVERAGE
C      SEX = SEX        1=FEMALE        2 = MALE
       INTEGER SEX
       DIMENSION IO1(40),IO2(120),IO3(80),IO5(6),IO6(80),IO7(30),IO8(80),

CALLED SUBPROGRAMS
 READ     UNPAC    MOVE     GET      NCOMP    P1403    FILL     S1403    PUT      EDIT     PUNCH    EMPY     EDIV     ELD      ESTO
 ESBR     IFIX     FLOAT    SUBSC    SDFIO    SDRED    SDWRT    SDCOM    SDAI     SDF      SDI

REAL CONSTANTS
   .100000000E 01=0256      .000000000E 00=0259      .100000000E 04=025C      .500000000E 00=025F      .100000000E 02=0262

INTEGER CONSTANTS
     1=0265      47=0266       2=0267      80=0268      40=0269   15296=026A      46=026B      48=026C      49=026D  10432=026E
 10944=026F    6592=0270       3=0271       6=0272      11=0273     800=0274       0=0275       8=0276      17=0277      41=0278

PAGE  10

    16=0279      50=027A   16448=027B    4032=027C      59=027D    2752=027E       7=027F      31=0280      38=0281      60=0282
    79=0283   15872=0284      44=0285      45=0286      62=0287      78=0288      51=0289   15552=028A   15360=028B      75=028C
  1500=028D      37=028E      10=028F      28=0290      36=0291      12=0292    3000=0293    3500=0294       5=0295      27=0296
     4=0297      30=0298      32=0299      52=029A      29=029B      43=029C      35=029D      34=029E      54=029F      57=02A0
    61=02A1      64=02A2      66=02A3      69=02A4      71=02A5      74=02A6      76=02A7   12544=02A8

CORE REQUIREMENTS FOR FHC61
 COMMON       0  VARIABLES     598  PROGRAM    1468

 END OF COMPILATION
```





```
*IOCS(DISK)
*ONE WORD INTEGERS
*EXTENDED PRECISION
*LIST ALL
*NAME FHC3A
C      THIS PROGRAM LISTS READMISSIONS
       DEFINE FILE 3 (5200,40,U,JREC)
       DEFINE FILE 1 (800,160,U,NREC)
       DIMENSION IO1(60) ,IO2(120),IO3(150),
      1IO5(40),IO6(80),XNUM(2,4,2),XHR(2,4,2)
       DIMENSION IDATE(25)
       DATA N1,NREC,JREC,      NER,TOT,IO2/-1,2*1,0,0.,120*16448/
       DATA XNUM,XHR/32*0./
C      FILE 1 = MASTER FILE
C      FILE 3 = CLASS CARD FILE
C      IO1 = PART OF MASTER RECORD
C      IO2 = OUTPUT PRINT ARRAY
C      IO3 = HEADER
C      IO5 = PACKED CLASS CARD
C       IO6 = UNPACKED CLASS CARD
C      XNUM = STUDENTS BY SEX, CLASS, FULL OR PART TIME
C      XHR = HOURS BY SEX, CLASS, FULL OR PART TIME
C      IDATE = DATE + DESCRIPTION
C      TOT = VARIOUS TOTALS
       READ (3'1)KOUNT
VARIABLE ALLOCATIONS
  XNUM(R )=0038-000E   XHR(R )=0068-003E     X(R )=006E        TOT(R )=0071        IO1(I )=0082-0077   IO2(I )=012A-0083
   IO3(I )=01C0-0128   IO5(I )=01E8-01C1   IO6(I )=0238-01E9 IDATE(I )=0251-0239  JREC(I )=0252        NREC(I )=0253
 KOUNT(I )=0254         N1(I )=0255         NER(I )=0256       NUM(I )=0257       IKOUT(I )=0258        MAX(I )=0259
   MIN(I )=025A          J(I )=0258          N(I )=025C         II(I )=025D         I3(I )=025E          I(I )=025F
   I2(I )=0260          L(I )=0261

UNREFERENCED STATEMENTS
 15      30      2

STATEMENT ALLOCATIONS
 5    =031F  16   =0327  6    =032D  7    =0331  15   =033A  12   =0352  14   =035A  13   =0362  60   =037E  17   =039A
 20   =03AA  87   =0387  23   =038D  88   =03E5  89   =03EE  90   =03F4  91   =03FA  92   =0400  70   =0404  24   =040E
 26   =0436  25   =0440  27   =0446  71   =044A  28   =0452  29   =0458  72   =045C  30   =0473  52   =0491  3    =048B
 7    =04C4  42   =061F  41   =062E  64   =0731  65   =073A  66   =0743  40   =074A
```

```
FEATURES SUPPORTED
 ONE WORD INTEGERS
 EXTENDED PRECISION
 IOCS

CALLED SUBPROGRAMS
 READ     S1403    MOVE     P1403    FILL     UNPAC    NCOMP    GET      PUT      EDIT     EADDX    ELD      ELDX     ESTO     ESTOX
 ESBR     IFIX     FLOAT    SUBSC    PAUSE    SDFIO    SDRED    SDAI     SDI

REAL CONSTANTS
   .100000000E 01=026A      .000000000E 00=026D      .500000000E 00=0270

INTEGER CONSTANTS
     3=0273       1=0274      80=0275      81=0276     150=0277      25=0278   12544=0279      22=027A      47=027B      85=027C
   120=027D   16448=027E   15872=027F       2=0280    3520=0281      93=0282      40=0283      21=0284      16=0285      46=0286
    59=0287       5=0288      26=0289      32=028A    2759=028B      33=028C    1728=028D      34=028E       0=028F       4=0290
  3776=0291    3264=0292    1984=0293      12=0294       6=0295       7=0296      31=0297      10=0298      23=0299      29=029A
    27=0298      64=029C      37=029D     101=029E      38=029F      18=02A0      54=02A1      90=02A2      55=02A3      36=02A4

    72=02A5     108=02A6      56=02A7      61=02A8      14=02A9      50=02AA      68=02AB      86=02AC     104=02AD      62=02AE
    66=02AF      24=02B0      42=02B1      60=02B2      78=02B3      96=02B4     114=02B5   15616=02B6      67=02B7      74=02B8
    73=02C3      79=02C4      88=02C5      95=02C6      89=02C7      97=02C8      70=02C9     105=02CA      84=02CB      45=02CC
  19=02B9    4032=02BA       9=02BB      75=02BC      83=02BD     111=02BE     122=02BF     128=02C0      20=02C1      44=02C2
    92=02CD     147=02CE

CORE REQUIREMENTS FOR FHC3A
 COMMON       0  VARIABLES     618  PROGRAM    2140
```

READMISSIONS

	MALE				FEMALE				TOTAL			
	FULL TIME		PART TIME		FULL TIME		PART TIME		FULL TIME		PART TIME	
	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS	NUMBER	HOURS
FRESHMEN	171	2723	7	38	163	2671	2		334	5394	9	38
SOPHOMORE	136	2179	5	34	132	2069	10	48	268	4248	15	82
THIRD YEAR												
SPECIAL			3	12			1	3			4	15

TOTAL NUMBER MALE 322

TOTAL HOURS MALE 4986

TOTAL NUMBER FEMALE 308

TOTAL HOURS FEMALE 4791

TOTAL ALL STUDENT 626

TOTAL FULL TIME STUDENTS 602
TOTAL FULL TIME HOURS 9642
TOTAL PART TIME STUDENTS 28
TOTAL PART TIME HOURS 135

TOTAL ALL HOURS 9762